



# Helping

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*Many ways are at hand by which school personnel can come to understand and apply the various aspects of educational technology depending upon the philosophy and approach to in-service education practiced by the school system.*

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**T**HE theme of this issue includes much more than the utilization of audio-visual aids in teaching. For purposes of this article the definition of educational technology proposed by Ely will be used:

Educational technology is a field involved in the facilitation of human learning through the systematic identification, development, organization, and utilization of a full range of learning resources, and through the management of these processes. It includes, but is not limited to, the development of instructional systems, the identification of existing resources, the delivery of resources to learners, and the management of these processes and the people who perform them.<sup>1</sup>

<sup>1</sup> Donald P. Ely. "The Field of Educational Technology: A Statement of Definition." *Audio-visual Instruction* 17 (8): 36; October 1972.

Educational technology includes not only the use of appropriate resources for learning but also a systematic approach to the utilization of such learning resources in order to achieve desired goals and objectives. The field of educational technology encompasses activities performed by media specialists, including the delivery of resources to teachers and learners and the management of processes and staff. Since we are dealing primarily with the use of educational technology by teachers, we are here concerned primarily with the development of instructional systems and the identification of existing materials or the development of new resources to enable teachers to assist learners to achieve appropriate goals.

## **Types of In-Service Education**

It is now possible for a public school system to provide in-service activities utilizing a variety of formats. These formats range all the way from traditional classes offered by colleges and universities to prepackaged approaches which can be utilized by indi-

# Teachers in Service To Use Technology

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viduals or groups of teachers with little or no outside assistance. In the case of in-service education in the use of educational technology the very technology for which competency is being projected may be utilized via kits and prepackaged approaches to provide such in-service growth. Some packages are developed so that a predetermined scope and sequence must be followed while other kits may be used in parts or as a total package depending on the needs and interests of the teachers. In some of the packages it is required that an organizer trained in the use of the materials be available.

## Formal Packaged Approaches

One of the most elaborate and extensively field-tested approaches to educational technology is the "Instructional Development Institute"<sup>2</sup> (IDI) developed through National Special Media Institutes. The IDI requires

<sup>2</sup> For further information about IDI, contact Charles Schuller, Director, University Consortium for Instructional Development, Michigan State University, East Lansing, Michigan 48823.

40 hours of instructional time and the package includes motion pictures, simulations, audio tapes, and filmstrips designed to systematically move participants to a clearer understanding of instructional development along with the appropriate application of media to the instructional system developed. In addition to the media which are utilized in the institute each participant receives a packet of materials that is completed during the week-long institute period.

A multi-media course entitled "Educational Media: Theory into Practice"<sup>3</sup> has been developed at the University of Colorado. The course design includes large group, small group, and individual activity. Large group presentation consists of 15 half-hour video tapes, while small group activity takes place

<sup>3</sup> For further information about "Educational Media: Theory into Practice," contact Bureau of Class Instruction, Division of Continuing Education, 920 Aurora, Boulder, Colorado 80302.

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within the school system where a group leader is designated, usually the media specialist, who is responsible for organizing 35 hours of hands-on instruction. The individual activity consists of completing correspondence lessons. The video tapes may be leased for use on a network or may be obtained in reel-to-reel or cassette format for use by a school system.

"Designing Effective Instruction"<sup>4</sup> is a 40 hour course developed by utilizing audio tapes and filmstrips along with student workbooks. The course includes such topics as how to develop goals, writing and classifying objectives, developing criterion tests, and deriving the content in order to meet the objectives and selection of the appropriate instructional media.

An "Interpersonal Communications Course"<sup>5</sup> requiring 30 hours of participation has been developed by the Northwest Regional Educational Laboratory. A set of nine 16mm sound motion pictures and one audio tape are utilized along with a participant handbook. The purpose of the course is to help teachers to communicate with students, the community, and other school personnel. Topics include paraphrasing, behavior description, describing feelings, nonverbal communication, concept of feedback, matching behavior with intentions, communicating under pressure, and communication patterns in a school building.

## Flexible Modules and Kits

Various approaches may be utilized for in-service education, since parts of packages may be arranged in any sequence desired by the participants. One of the best known approaches is a series of 25 filmstrip and tape programs produced by Vimcet Associates<sup>6</sup>

<sup>4</sup> For further information about "Designing Effective Instruction," contact General Programmed Learning, San Rafael, California.

<sup>5</sup> For further information about "Interpersonal Communications Course," contact Northwest Regional Educational Laboratory, 500 Lindsay Bldg., 710 S.W. Second Ave., Portland, Oregon 97204.

<sup>6</sup> For further information about "Behavioral Objectives," contact Vimcet Associates, P.O. Box 24714, Los Angeles, California 90024.

dealing with behavioral objectives. The topics covered include such subjects as defining and writing objectives, establishing performance standards and tests, evaluation, individualized instruction, and curriculum rationale. In contrast to the packages described earlier, where there is a fixed scope and sequence that must be followed by participants, any topic might be selected which requires up to 20 minutes for the filmstrip and audio tape presentation and an additional 20 to 25 minutes for discussion.

"Teacher Education Materials for In-Service Teachers"<sup>7</sup> consists of multi-media sets of materials on Programmed Instruction, Basic Educational Graphics, Using Conventional Media, Systems Innovation for Curriculum Development, Cameras in Education, Instructional Graphics for Television, and Systems Facilities in Flexible School Design for Media Usage, prepared by Scott Education. The multi-media utilized for each of the topics generally consist of audio cassettes, overhead transparencies, and student manuals. A kit dealing with Basic Educational Graphics, for example, includes 10 filmstrips on the topics of media usage, basic classroom graphics, teacher evaluation of graphics, instructional use of graphics, lettering A, lettering A-1, dry mounting, laminating, composition, and tapes, hinges, and storage, with eight records to accompany the filmstrips and 12 overhead transparencies.

Thus it is possible to put on a workshop on any one of the general topics (for example, Camera in Education), or an individual instruction module from the total package might be selected to make a presentation on a specific topic (for example, dry mounting taken from the Basic Educational Graphics multi-media set). Using these kits, a group of teachers in a school might undertake in-service education in any of the topics identified, with the media specialist assisting the teachers with hands-on instruction utilizing only the equipment and materials used by the school system.

<sup>7</sup> For further information about "Teacher Education Materials for In-Service Teachers," contact Customer Service Department, Scott Education, Holyoke, Massachusetts 01040.

An "Educational Media Kit"<sup>8</sup> is distributed by McGraw-Hill Book Company, with Kit 1 consisting of an overview film entitled "Resources for Learning." Kits 2-13 include Display Surfaces, Opaque Projection, 35mm Filmstrips, 16mm Motion Pictures, Tape and Disc Recordings, 2 x 2 Slides, 8mm Motion Pictures, Overhead Transparencies, Language Laboratories, Television, Programmed Instruction, and Instructional Materials Center. These in-depth media kits are presented via slides, audio tapes, overhead transparencies, and motion pictures. There are also five kits which consist of case examples showing multi-media approaches to different subject matter areas including Westward Movement, Haiku Poetry, Concept of "Set," Sound and the Human Ear, and Rotary Combustion Engine. It is possible for a local leader, usually the media specialist, to make use of various items from the kit for introduction to a topic and then to utilize local equipment and materials for demonstration and practice.

A recent Media Specialist Institute held at Ohio State University focused on "In-Service Education,"<sup>9</sup> with participants responsible for developing multi-media programs dealing with in-service education. The programs developed include "Instructional Design Plan," "Looking for Help? Try Media Aids," "A Modular Orientation for Teachers New to a School System," "In-Service Education—A Creative Perspective," "Organizing Community Resources for the Learning Center," and "Conferences: Communication Bridges Between Teachers and Parents." The programs utilize slides, audio tapes, and participant sheets.

Some school systems wish to consider operation of equipment as a part of an in-service program. There are various materials which are available for this purpose but one of the best known is that developed at West-

<sup>8</sup> For further information about "Educational Media Kit," contact McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, New York 10020.

<sup>9</sup> For further information about "In-Service Education," contact Sidney C. Eboch, College of Education, Faculty of Educational Development, 29 W. Woodruff Ave., Columbus, Ohio 43210.

ern Michigan University<sup>10</sup> which includes sets of 2 x 2 slides and audio tapes, each set dealing with the operation of a specific piece of audiovisual equipment. A teacher can pursue a self-instructional program in order to learn how to operate specific equipment available in his or her school building.

There are many other kits and multi-media kits available to present certain aspects of educational technology. The aforementioned examples suggest that it is possible for a school system to utilize such kits with varying degrees of involvement by a local staff.

## Programs To Meet Local Needs

Increasingly public schools desire to develop in-service programs to meet their own needs. Such programs utilize outside specialists in some cases, while other programs use only their own staff. The author participated in such a program in a public school where rather highly specialized needs were identified with the aid of a local committee consisting of teachers, subject matter specialists, and administrators. The time requirement for the participants was essentially the same as for a college credit class. The author, however, was directly involved about one third of the time, while the other two thirds of the time the teacher activities were supervised by local specialists using some of the kits and packages already described. Such an approach makes it possible for a local school system to design in-service activities in the area of technology which meet particular needs a school system might have.

There are numerous ways, therefore, in which school personnel can come to understand and apply the various aspects of educational technology depending upon the philosophy and approach to in-service education practiced by their school system. Opportunities range from highly individualized and personalized approaches to various educational technology systems for helping teachers learn about educational technology. □

<sup>10</sup> For further information about "Equipment Operation," contact David Curl, Western Michigan University, Kalamazoo, Michigan 49001.

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