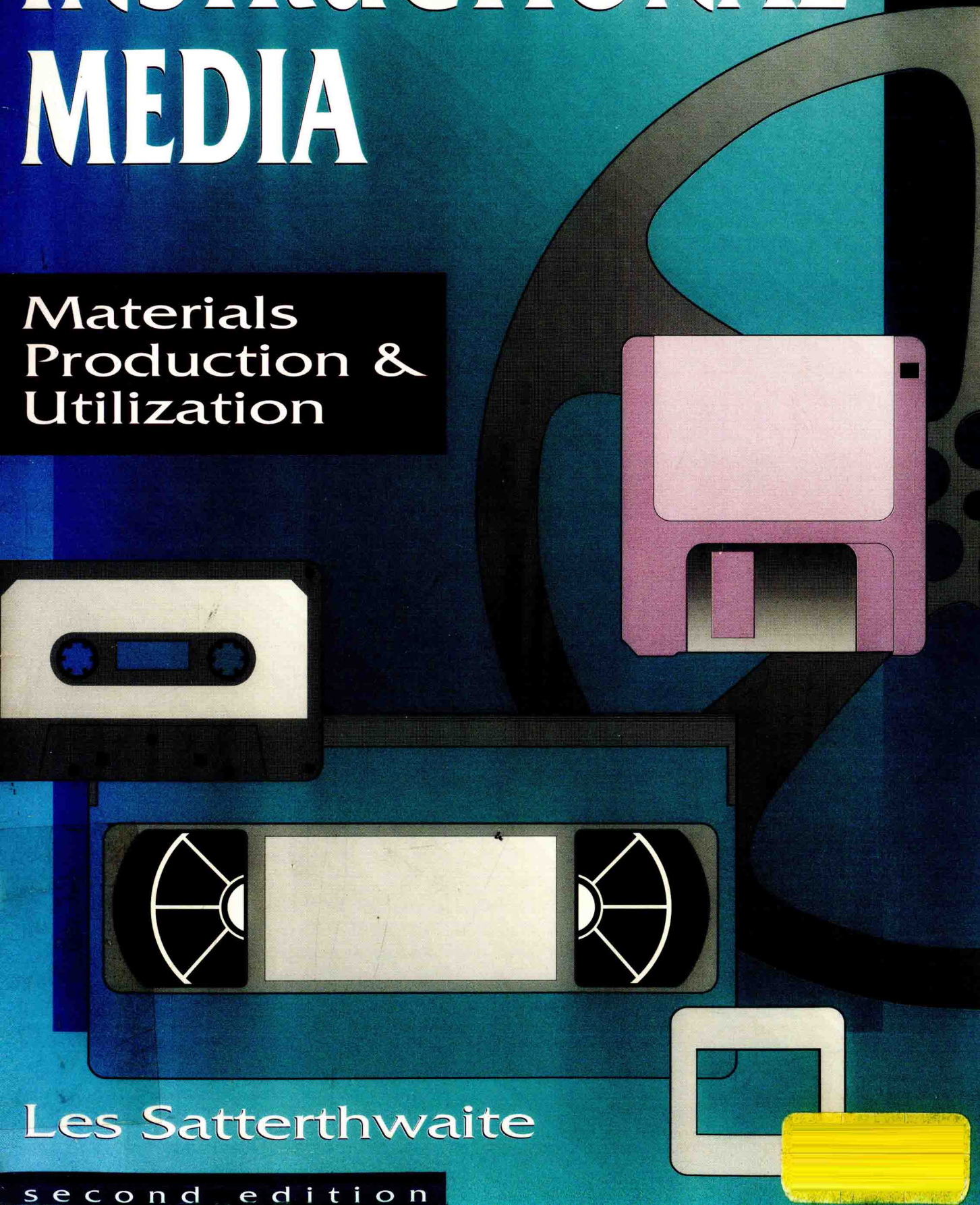
INSTRUCTIONAL MEDIA

Materials Production & Utilization



Les Satterthwaite

second edition

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Materials Production & Utilization

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INTRODUCTION:

The previous revision of this text was done in 1983 and since that time major innovations have occurred in media, materials and training, and instruction. For one thing the Macintosh Computer has been "invented" and the Hypercard program has been developed. For me these two events have created a major change in my way of looking at the world of instruction and media. So much so that it was very difficult for me to revise this text in the normal print format. If I had the time and support I would simply publish a set of 3½" discs that would allow you to browse through the world of media as it relates both to public education and industrial training.

Another event which frustrated my revision of this text is the recent distribution of the major educational film libraries in the CAV video disc format. The decision to issue these "films" in a CAV video disc suggests that now the schools can afford their own libraries and the classroom teacher can access to a truly random access information source through the video disc playbacks units. It also means that teachers who are interested will begin to write their own computer programs so that these discs can be used by their students in an independent interactive video format. The current successes of this media suggests that many classroom teachers may develop their own "cottage industry" and earn extra money by creating the programs for these CAV discs.

All of this is just to suggest that change is occurring. It is occurring at such a rapid rate that by the time you get your media or materials home (or into your classroom) they are out-of-date. For this reason don't be too surprised if the next revision of this text is a computer disc.

Les Satterthwaite

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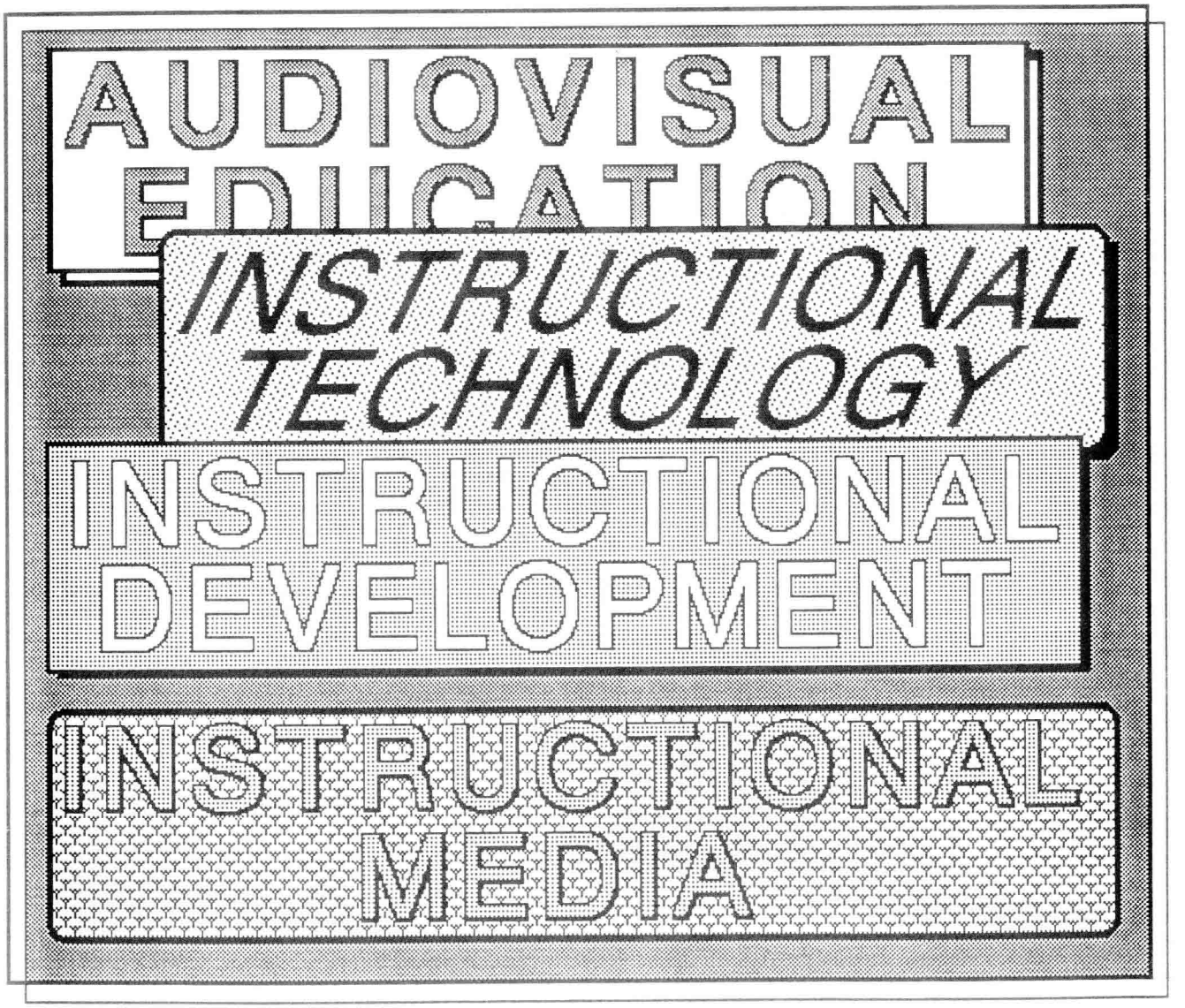
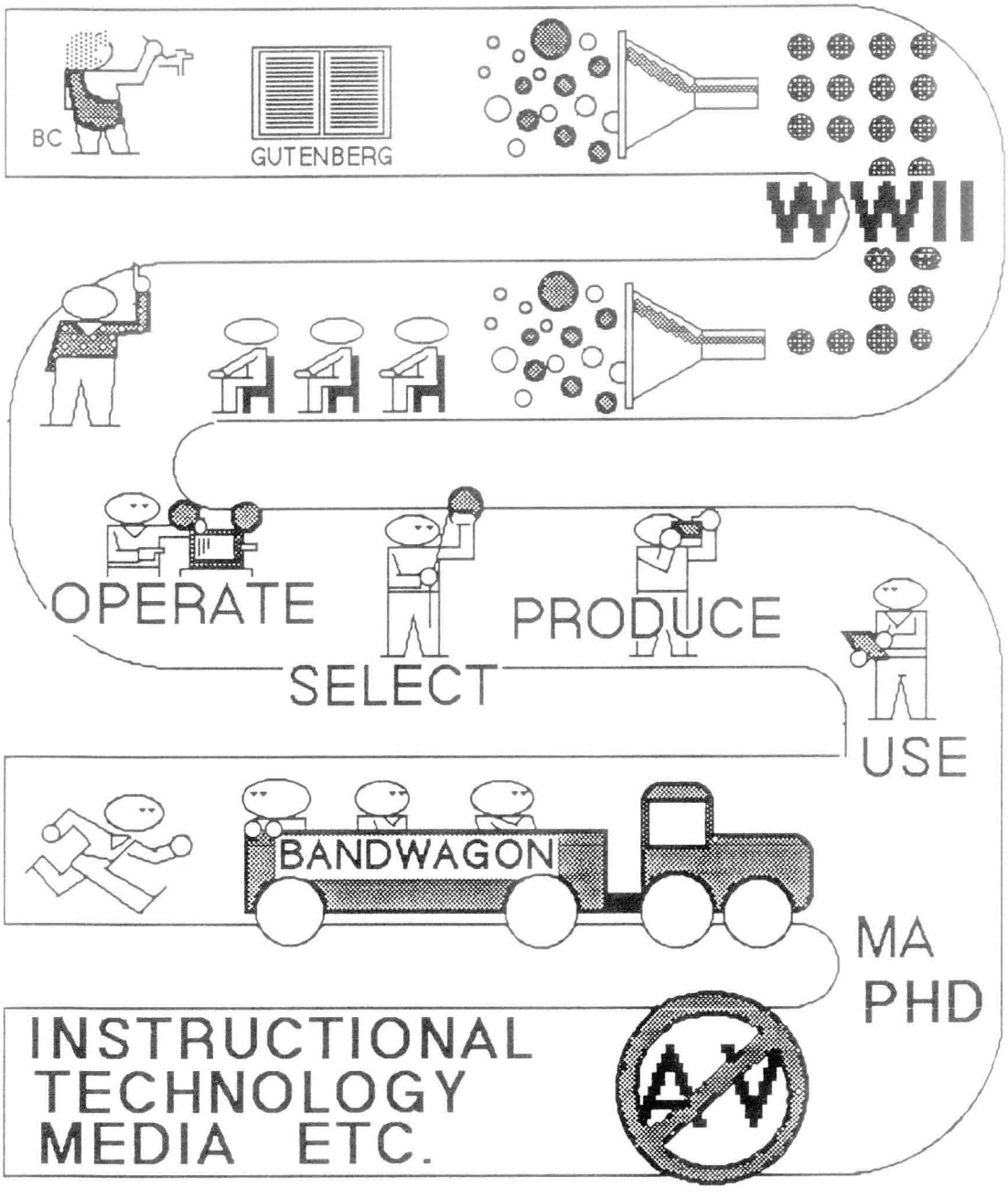
CHAPTER 1

DEFINING THE FIELD



A HISTORY OF INSTRUCTIONAL MEDIA:



NOTES

No one is exactly sure where mediated communications began. For some it was the cave paintings in Altimira, Spain. In this instance, communication with the powers that controlled the hunt. This magical interchange between man and god was intended to insure success. The more realistic the rendering the more likely the hunt was to be successful. For centuries the Greeks were credited with the ideal instructional system—the teacher presenting ideas and theories and the students responding to their "questions". From 2,000 B.C. to 1400 A.D. this model of instructional communication—oral presentation and interaction—was the model used. In the mid-1400's Johannes Gutenberg began the technology that was to change information transmission as well as education. The printing press provided the system for the mass production of information. Now scholars all over the world could have an accurate accounting of what other scholars were doing.

In 1901, Marconi produced the first trans-Atlantic wireless telegraph signal which was the precursor of radio. Marconi always felt that education would benefit greatly from this "radio". About that same time Thomas Alva Edison was developing the phonograph and the motion picture camera and projector. Both of these were considered to be inventions that would change the nature of education and instruction. While "educational radio" still exists in some parts of the country and there are "educational films" and "educational recordings", all of these technologies are more noted for their contributions to entertainment. It wasn't until World War II that these became viable and valuable instructional media.

With the declaration of war came the necessity to train millions of men and women in life-saving skills. The old military system of using a sergeant to demonstrate a skill to a squad was no longer appropriate. Now masses of soldiers required training in relatively short periods of time. Film was rediscovered as an effective educational tool and new technologies such as slides and overhead transparencies were developed to expedite the process. It was successful—the war was won—and with peace came new problems.

Discharged soldiers went back to school. Some as teachers but most as students under the GI Bill. As they arrived in the classrooms the cry was "where's the media". The instructors wanted media to help them deliver the instruction and students wanted media to help them acquire information. The public schools were the first to respond. They sought out and hired "media specialists" who were responsible for operating and maintaining the new media. They were also responsible for locating sources of instructional materials for these media. A third skill was added—production. The media specialist was given the responsibility for the local production of instructional materials for these media. Last but not least the media specialist was required to help the classroom teacher deal effectively and efficiently with the use of media and materials in the classroom.

Soon colleges and universities jumped on the bandwagon and offered Masters degrees in media. These programs became so popular that they were expanded to include either an Ed.D. or Ph.D. degree. To insure that these degrees would be academically respectable they added "communication theory", "perception theory", and other theoretical concerns to the curriculum. The names also began to change. Originally called Audio Visual Education, these programs took new names such as "Instructional Technology", "Instructional Development", and "Instructional Media". The power of these programs is indicated by the fact that business, industry and government adopted the ideas and began training programs that today have larger budgets than all of higher education.

A DEFINITION

Instructional Media is the selection, the production, the operation and the utilization of media and materials in an instructional or training setting. With the objective of producing valid instruction.

Before we begin a detailed investigation of the field of Instructional Media it is appropriate that we establish the perimeter of our investigation. In short, let's define the field.

> Instructional media, the area, is the selection, production, operation, and utilization of both media and materials in an instructional or training setting with the objective of producing valid and predictable instruction.

If you notice a similarity between the definition and the history we just looked at it is intentional. The public schools were looking for certain characteristics in the Media Specialist and these characteristics are important.

INSTRUCTIONAL MEDIA, THE AREA—the term instructional media may be used to describe an area of study or the equipment used to deliver instructional media to an audience. In this case the intent is to define the "area" known as Instructional Media.

IS THE SELECTION—the term "selection" is used to suggest that there is a wealth of existing instructional materials that are available for the use of the instructor. Within this concept of selection are "identification" of the sources of these materials, techniques for the "acquisition" of these materials, and last but not least the "evaluation" of these materials for possible use in an instructional setting.

PRODUCTION—this term implies that even though there is a wealth of existing materials they may not meet your specific objectives or audience. If this is the case then it may be necessary to resort to the local production of appropriate instructional materials. This "production" will involve various production skills, production media (equipment), and production materials. Production is one of the most rapidly changing aspects of the field of Instructional Media.

OPERATION—to effectively deliver these materials to the audience we must also be concerned with the "operation" of the media that is our delivery system. This operation involves making the equipment work, maintaining the equipment, and even making minor repairs to keep the system functioning.

AND UTILIZATION—this term involves selecting appropriate instructional strategies of the various media, picking the right media for the audience, and designing the instructional system so that the learners can attain the desired objectives.

OF BOTH MEDIA AND MATERIALS—the term "media" used in this context refers to the hardware, the equipment designed to produce or deliver instruction to the audience. The term "materials" refers to the software, the information to be delivered. The motion picture projector is "media" while the film shown on the projector is a "material".

IN AN INSTRUCTIONAL OR TRAINING SETTING—while it can be argued that any situation can be a learning experience we are, here, talking about the more formal setting of schools or training programs.

WITH THE OBJECTIVE OF PRODUCING VALID AND PREDICTABLE INSTRUCTION—the basic concept in Instructional Media is that you begin by defining what your objectives are and then develop the instruction to efficiently and effectively lead the learners to the attainment of these objectives. As Robert Mager suggests, "If you don't know where you are going how will you know when you get there?". While objectives are important it should be pointed out that they are not necessary for every activity in the classroom. Only for those that are sufficiently important to insure they have been mastered.

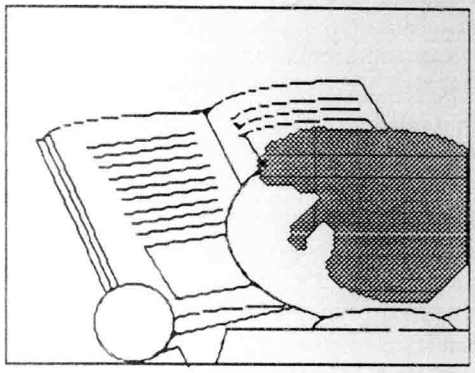
Instructional Media is---

Selection !

Selection is---

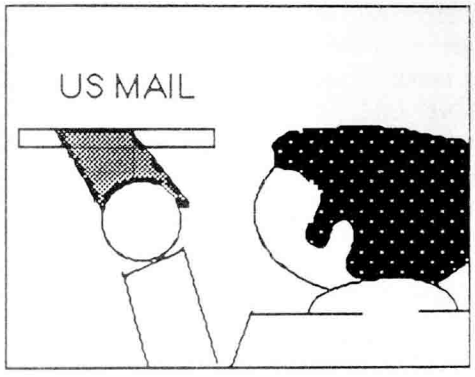
IDENTIFICATION

* What media and materials are there?
* What sources will give me information about them?



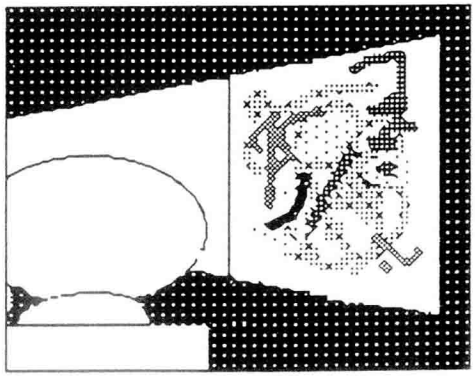
ACQUISITION

* How do I purchase, rent, borrow or steal these items?
* Copyright and the fair use doctrine.



EVALUATION

* How good are these media and materials?
* Technical quality, artistic quality, and instructional quality?



One aspect of the definition of Instructional Media is the concept of SELECTION. There are three areas of selection that we need to examine in more detail. Selection is the identification, acquisition and evaluation of existing instructional materials.

The IDENTIFICATION of instructional materials deals with the basic questions "What media and materials are there?" and "What sources are there that will provide information about these media and materials?". The first concern—What's out there?—leads us to the two classes of existing instructional materials 1) commercial materials and 2) free and inexpensive materials. Commercial instructional materials are those that are available for sale or rent. They are produced with the intent of making a profit from their sale or rental. Free and inexpensive instructional materials are those which are made available at no cost or low cost to the user. These materials are produced with the idea of promoting an idea, product or concept by making these materials available to instructors. The question, "What sources are there for these materials?" also deals with these categories. Commercial instructional materials are listed in the National Instructional Center for Educational Materials (NICEM) Indexes. These are actually a series of catalogues that list most of the instructional materials available for sale. There are catalogues for specific media such as the NICEM Index to 16mm Films, the NICEM Index to 35mm Slides and Filmstrips, and the NICEM Index to Overhead Transparencies. Other catalogues cluster media by topic such as the NICEM Index to Vocational Education Materials. Free and inexpensive materials are also listed in the NICEM Index to Free and Inexpensive Materials. However, a second series of catalogues published by the Educator's Progress Service seems to be more complete in terms of free materials. Some catalogues are clustered according to media—The Educator's Guide to Free Films, The Educator's Guides to Free Video Tapes, and The Educator's Guides to Free Slides and Filmstrips. Other catalogues in this series are clustered according to content areas. For example The Educator's Guide to Free Science Materials and The Educator's Guide to Free Elementary Materials.

ACQUISITION is another aspect of selection. The process of acquiring materials from the various Educator's Guides is explained in the Guides. The NICEM Indexes provide the names and addresses of the producers from whom these materials can be acquired. There are basically four aspects of acquisitions: 1) you can BUY the materials, 2) you can RENT the materials, 3) You can BORROW the materials, and 4) you can STEAL the materials.

EVALUATION is the last aspect of selection. Evaluation refers to the process of determining whether the materials will assist the learners in attaining the objective. While this evaluation of the "instructional quality" of the materials is primary we are also concerned with the "technical" and "artistic" quality of these materials. Both commercial and free/inexpensive instructional materials require evaluation to determine their suitability for the instructional system that is being developed.

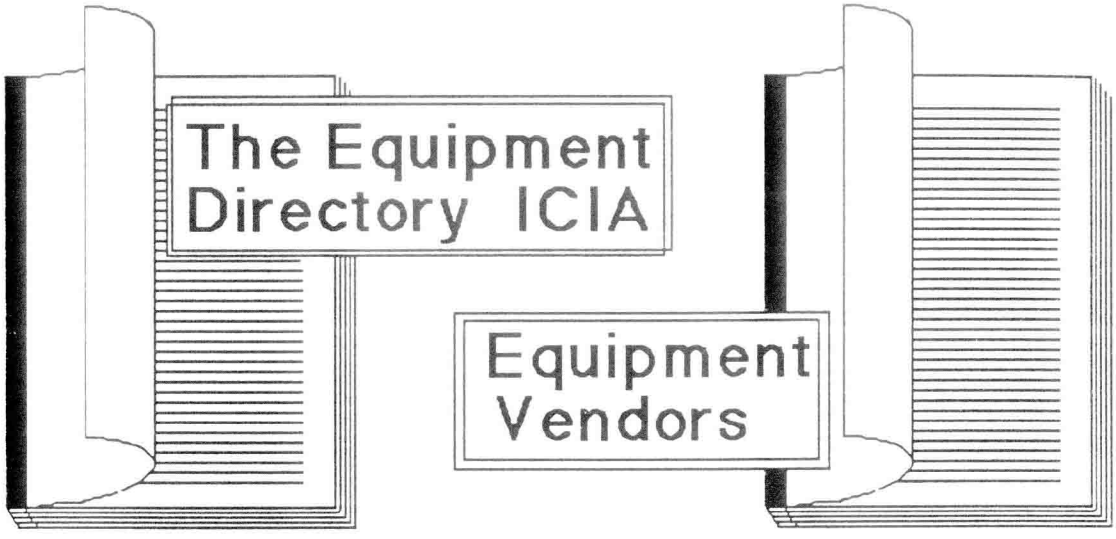
The SELECTION of existing instructional materials involves—

1. The IDENTIFICATION of these materials, determining what's out there.
2. The ACQUISITION of selected materials, actually getting the desired materials.
3. The EVALUATION of these selected materials to determine their appropriateness for the instructional situation.

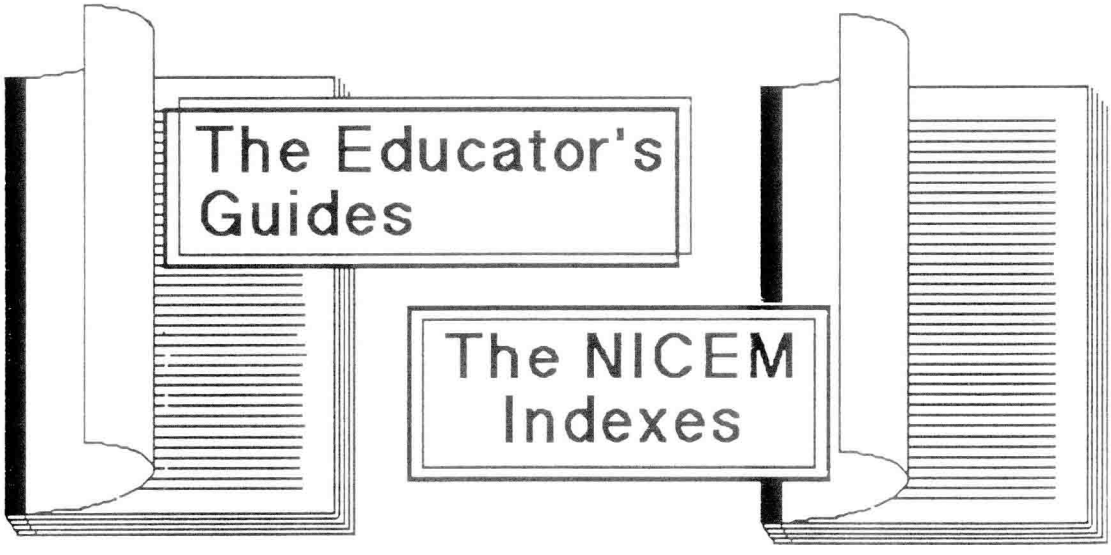
Instructional Media is Selection and Selection is---

Identification !

Identification of sources of media:



Identification of sources of materials:



The field of Instructional Media involves the selection of instructional media and materials. This concept of "selection" involves the IDENTIFICATION of the sources of instructional media and instructional materials.

IDENTIFICATION OF SOURCES OF MEDIA. Media is defined as equipment or hardware. A motion picture projector, a computer, a video disk player, etc. are all examples of hardware. This equipment is used to deliver the instructional materials to the desired audience. There are quite literally thousands upon thousands of types, brands, and models of equipment. It is impossible for an individual to be familiar with the existing equipment and stay up to date on the newer developments in the technology of instruction. There are a number of sources that will assist in this process.

The EQUIPMENT DIRECTORY produced by the International Communications Industries Association (ICIA) is, according to their ads, the most comprehensive communications products reference in the world. This directory lists over 200 categories of equipment with nearly 3000 individual products. Each product listing shows a picture of the equipment, gives detailed specifications, suggests applications, and gives addresses of both the manufacturers and the dealers. If you want to know what's available in delivery systems, the Equipment Directory (published yearly) is a great buy at $40.00.

Regional and local vendors often publish CATALOGUES. The advantage of these is that the vendor often has a showroom or may even bring the equipment around so that you can make sure it is exactly what you want. On the other hand, no single vendor will carry all of the equipment listed in the Equipment Directory. Even with collections of catalogues of local vendors you may still miss some of the equipment.

A third source of information about equipment is the yearly TRADE SHOWS. Here the "exhibits" allow you to try out the equipment and get information from trained personnel. There are a number of these but AECT— the Association of Educational Communications and Technology—is one of the best.

IDENTIFICATION OF SOURCES OF MATERIALS. These instructional materials can be divided into three categories, two we have looked at before and a new one. These are 1) commercial materials for sale, 2) free, inexpensive materials you can borrow, and 3) rental materials that are available for a nominal rental fee.

The NICEM Indexes is a major source of information about the commercial materials for sale. These are so important that the next page will be devoted to a look at these valuable identification tools.

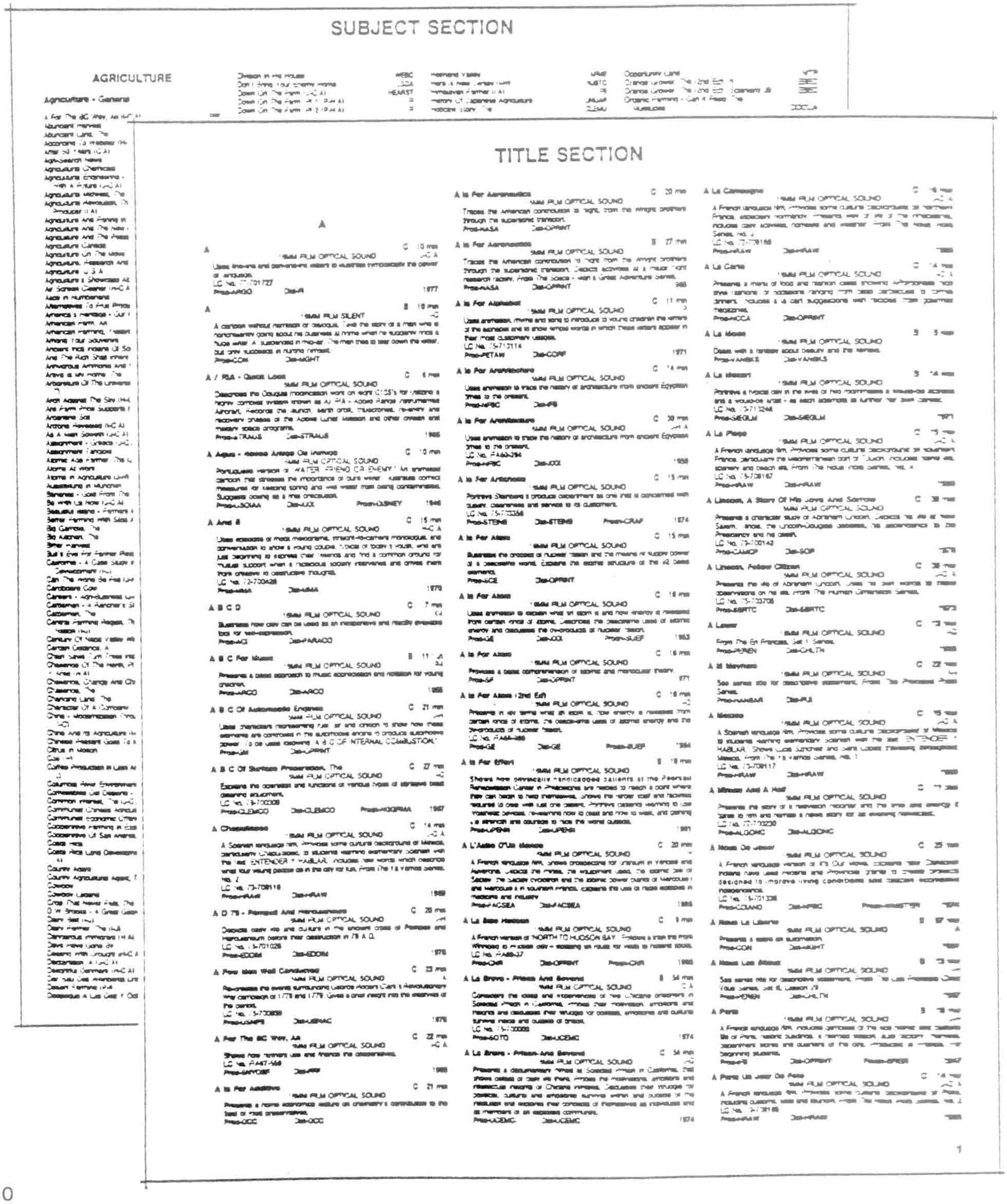
The EDUCATOR'S GUIDES produced by the Educator's Progress Service is a major source of information about free and inexpensive materials that might be used for instruction. This also is an important resource and will be discussed in detail later.

RENTAL CATALOGUES are, obviously, a major source of information about the various media available for rental. Initially these were "film libraries" but more recently they have been switching to film and video collections. These have been successful due to the high costs of the materials— so high that most schools cannot afford to purchase them. The rental libraries buy the films, and now video tapes, and make them available to the end user at a more reasonable cost. Usually these film libraries are a service of a local university. However, there are some school districts that are large enough to be able to afford to develop their own film libraries.

Instructional Media is Selection and Selection is identification of sourses.

NICEM Indexes

Major source of commercial materials:



The NICEM Indexes are sources of commercial instructional materials that are produced by the National Information Center for Educational Media, University of Southern California,University Park, Los Angeles, California 90007. Some of these indexes are listings of instructional materials for a specific media. For instance—

Index to 35mm Educational Filmstrips
Index to Educational Overhead Transparencies
Index to 8mm Motion Cartridges
Index to Educational Video Tapes
Index to Educational Audio Tapes
Index to Educational Records
Index to Educational Slides

Other indexes list all media that deal with a specific subject matter. For instance—

Index to Psychology (multimedia)
Index to Health and Safety Education (multimedia)
Index to Vocational and Technical Education (multimedia)
Index to Environmental Studies (multimedia)
Index to Non-print Special Education Materials (multimedia)

To locate the materials listed in these volumes each Index provides a complete description of appropriate search procedures. You can look for materials by subject. A "Subject Heading Outline" will indicate which categories are used in the subject headings. In the "Subject Section" (see the illustration on the opposite page) there will be a listing of the titles of the various media that fall under each subject heading. Titles may well appear under more than one heading. Once you have identified the title of the instructional materials you think you want you turn to the "Title Section". As you can see on the opposite page, this is an alphabetical listing of each instructional material. While the description will vary from media to media, in the 16mm films shown on the opposite page these descriptions include:

The TITLE, with any "subtitles" that might be appropriate.
The VERSION or EDITION of the production.
The SIZE and PHYSICAL DESCRIPTION.
The LENGTH (running time) in minutes
Whether it is COLOR or Black and White (B/W).
A brief CONTENT description.
Suggested AUDIENCE or GRADE LEVEL.
The PRODUCER and their code number.
The YEAR OF RELEASE of the product.

This information should assist you in determining whether or not this instructional material is going to be suitable for your instructional unit. However, the final decision should be made after you have viewed and evaluated the product.

The NICEM Indexes are quite expensive and are not likely to be found in individual schools. Many school districts have them in a centralized professional library or can access to them through interlibrary loan. Public libraries are also not likely to have these indexes immediately available but a good reference librarian will be able to access them for you. Almost all college and university libraries will have these indexes as part of their reference collection.