DOCUMENT RESUME

ED 064 884 EM 009 943

AUTHOR	Fransecky, Roger B.; Debes, John L.
TITLE	Visual Literacy: A Way to Learn--A Way to Teach.
INSTITUTION	Association for Educational Communications and Technology, Washington, D.C.
SPONS AGENCY	National Education Association, Washington, D.C.
PUB DATE	72
NOTE	36p.
AVAILABLE FROM	AECT Publications, Dept VLC, 1201 16th Street, N.W., Washington, D.C. 20036 ($3.00)
EDRS PRICE	MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	*Audiovisual Aids; Communication Skills; Equipment Evaluation; *Guides; Photographic Equipment; *Photography; Research Needs; *Visual Literacy

ABSTRACT

An illustrated introductory primer is designed to familiarize educators with the concept of visual literacy and classroom practices which help teach it. Visual literacy is defined, its objectives are explained, and the use of pictures and cameras in literacy programs is explored. Tips for buying cameras for school programs are included. Some visual literacy programs in schools are described briefly. A bibliography and short summary of research findings are presented. (JK)

Visual Literacy:
A Way to Learn—A Way to Teach

by Roger B. Hanson cky and John E. Debes

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Library of Congress Catalog Card No. 74-190623

Copies of this book may be purchased from the Association for Educational Communications and Technology, Publications Department B, 1201 16th Street, N.W., Washington, D.C. 20036. Discounts are available on bulk orders (more than 20 copies); write to the Director of Publications for information. Stock No. 071-02904.

Design and artwork: Graphichouse, Ltd.

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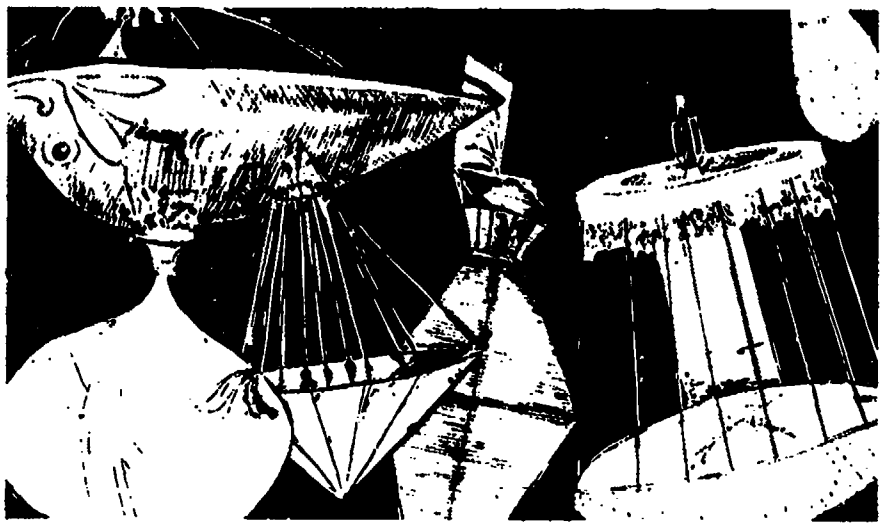
One. An Introductory Note

This booklet is for teachers and those who work with teachers in developing new curricula, materials, or techniques for reaching children and involving them in learning. It is intended to acquaint you with the educational ideas and classroom practices in a new field called *visual literacy*. It offers some thoughts and concepts underlying visual literacy and gives you some background on the development of this new field. Since it is not all-inclusive, this booklet does provide you with sources for further exploration of theory, research, and classroom practices.

You should be warned that conviction about the validity of the ideas and practices in the field of visual literacy comes about through personal experience with children who are engaging in visual literacy activities. Reading about visual literacy may whet your curiosity about it; only experiences of your own can really deepen your sense of its validity and value. If you really want to understand visual literacy, you will have to *do* something about it. To help you get started, some practical advice is offered.

Since visual literacy concepts and practices affect all learners on all educational levels, from preschool through the continuing education of older adults, this booklet should be valuable to you no matter what your role in education



Two. Our Visual Language

Visual literacy, like all other aspects of education, begins with the child. Teachers, counselors, and clinicians, whether they deal with children at the preschool level, in elementary grades, secondary grades, or in special circumstances, know that they are dealing with children who are different in certain ways from children of twenty or more years ago. If this were not the case, the visual literacy movement would be neither necessary nor really possible. How is today's child different? How did he get that way?

In general, today's child is more visual, better informed, and intellectually more skilled. The principal reason for these sets of differences appears to be that he has been watching television. But all the other kinds of visual and audiovisual communications to which the child is exposed almost from birth are also contributing factors: pictures in publications, billboards, cartoons, movies, slides, visual catalogs, etc. Youngsters are used to receiving messages presented in sequences of pictures. The passive listening and watching experiences that children bring to school can be utilized to develop the interactive skills of communication.

Teachers, parents, and others involved as leader-participants in visual literacy projects frequently comment on the apparent ease with which students communicate with a camera. Adults who remember their earliest struggles with written communication find their pupils' visual language facility remarkable.

The New Student

The visual consciousness of the "television generation" is but one facet of the differences between today's young people and the adult generation. To understand and respect fully these differences, we must take a closer look at our new students—for they are increasingly catalysts of change in our schools and in society.

Some adults, needless to say, find it hard to relate to today's child. Many adults find "kids" frightening because, among other things, they seem so markedly different, talk about freedom, get "high," and at times seem utterly irrational.

In America today, we see young people refusing to reproduce the ordered sensible lives of their parents, and adults refusing to swoon over kids and agree with them that "the establishment" is monolothic and antihuman. Some observers, such as Charles A. Reich in *The Greening of America* (Random House, 1970) have taken an optimistic view of youth, seeing them as avengers and purifiers, attributing to them "a new consciousness." His critics argue that the "Consciousness III" kids are not without fault—even if they do love bellbottoms in nature's colors, eat natural peanut butter and organic tomatoes, and love Thoreau-like freedoms.

Nevertheless, however adults perceive kids, they are the same young people who are forcing change in our institutions.

The Role of Students in Educational Change

The past twenty years have spawned a generation of students who have watched America move from an exuberant, bicep-flexing adolescent among nations to a nation anxiously passing from youth to middle age, fingering its receding hairline and probing its more-than-adequate stomach. Young people, tired of a seemingly endless war in Southeast Asia and facing a difficult war with environmental pollution, agree with John Gardner, head of Common Cause: "We are in trouble as a species."

Young people are highly critical of education and educators, of how schools are functioning now. Schools, they tell us, are institutions that absorb funds to support tedium and enslavement, institutions with undue emphasis on credentials, certifications, and superficial achievement affirmed with a diploma. The young (and many of their teachers) find the ritual of schooling unending, addictive, compulsory, and compulsive.

These are harsh criticisms, but many of us who are parents, professional educators, or "Consciousness II" men find ourselves leveling simi-

lar criticisms in slightly different terms. We, too, press for more change in the system, more innovations, more opportunities for individualized learning options, and more child-centered classrooms.

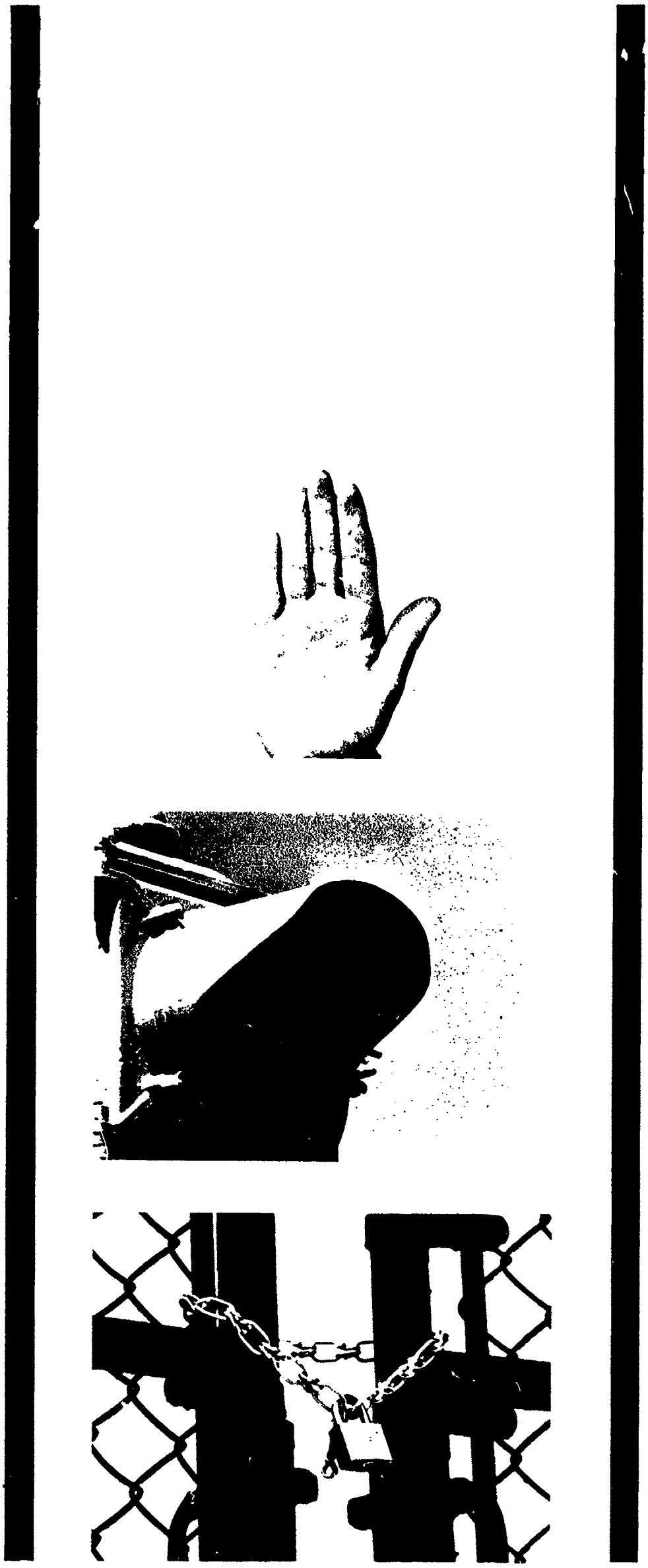
Indeed, education is under attack from all sides. Some, who would liberate the critical and creative resources of people for maximum individual growth and development, call for abolition of the control that institutions now exercise over their educational values. Others are forcing state legislatures to narrow the credibility gap between educational fact and fantasy with "teacher accountability," educational vouchers, and performance contracting. Many make clear distinctions between *education*, the liberalizing, humanizing change in persons, and *schooling*, the inflexible, "hard" school.

Students, victims of what has been called "the great training robbery," have pushed for responsible alternatives within the present educational system, for new and more enriching experiences in learning.

Many high school and college students working for school reform have helped make the school more responsive to their needs and more affirmative in its expectations of them. In many schools, students have found participation in educational governance a valuable learning experience, one that makes many demands on their maturity and sense of responsibility.

In some cities, students have become involved in substantive change. Students in New York City, Philadelphia, Berkeley, and elsewhere have helped establish "street academies" to help dropouts move into meaningful jobs and further schooling. In nearly every case, projects involving TV, film, or other photographic treatment of environment, self-concept, or social conditions have been essential parts of the program. On college campuses, "film nuts" and "TV freaks" have become so numerous that hundreds of campuses now offer film courses and film festivals.

Young people have helped educators find a new agenda for education, one that is based on a new concept of education's purposes and procedures. Visual literacy activities, to be understood fully, must be seen as part of this trend toward widening options—



options in language, communication, and in sharing experiences with others. Visual literacy as a concept can revitalize much of learning and teaching.

What Do We Mean by "Visual Literacy"?

What is *visual literacy*? The members of the National Conference on Visual Literacy have agreed upon the following definition:

> Visual literacy refers to a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, and symbols natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communications.

This kind of definition may satisfy the educational psychologist and others, but teachers are likely to ask, What can the visually literate child do that the verbally literate child cannot do? In what ways is the visually literate child's behavior different? As might be expected, visual behavior is analogous to verbal behavior. A visually literate child can "read" visual language with skill. He can "write," that is, compose visual statements with skill, perhaps with eloquence. He can translate from the visual language to the verbal and vice versa. He has a basic understanding of the grammar of visual language and some realization that it parallels verbal language. He is familiar with and somewhat skilled in the use of the tools of visual communication. And, finally, of course, he is developing a critical sensibility toward visual communication.

Because visuals offer pupils a fascinating way to share experience, and, at the same time, provide a meaning-centered, language-sharing technique, teachers have analyzed visual meaning (just how does a picture "mean" anything?). In so doing, teachers utilize many of the techniques of verbal language analysis. Some linguists would argue that language is a "learned arbitrary system of vocal and written symbols by means of which individuals interact in terms of their total culture." Seen in this light, visual language[1] seems less "linguistic"—but is it?

How Does a Picture Mean?

During the past decade a number of linguists, semanticists, and psychologists began to explore the visual language model with a less jaundiced eye than their predecessors. Several suggested that to consider the word predominant in an increasingly visual culture is to be in the position of those tenacious, aggrieved spirits who continue to envision the already circumnavigated earth as a flat table. Currently we find in the work of Adelbert Ames, Jr., Ernst Cassirer, Benjamin Whorf, philosopher Colin Murray Turbayne, and others a serious attention to the nature of the visual experience, and an attention to the importance of understanding how visual signs can influence our perception of reality.

Today we proliferate visual language—symbols, message carriers, body language—on television, in film, and in advertising. Some of this visual language is beginning to haunt the collective imagination of Americans, sometimes making objective thinking and thoughtful, critical response to media messages confusing and difficult. But students in visual literacy projects suddenly sense a new power, a new language facility, that they haven't felt with words. They also begin to make linkages between verbal language composed of predicate and noun elements arranged purposely to communicate, and visual language elements (action and object elements) which are also arranged for intentional communication.

Early visual literacy research[2] centered on the work of structural linguist Charles Carpenter Fries, and particularly in his work, *The Structure of English* (Harcourt, Brace, 1952). Fries suggested that our language was based on talk, on basic "utterances," and that a complete useful analysis of how we speak and write must first classify spoken language elements by function. Therefore, within an utterance like "John sees Harry," because *John* is the "performer" of the action he is the subject element; *Harry* is the object element because he is the receiver of the action. If we switch the words *John* and *Harry* we dramatically alter the meaning of the utterance: now Harry sees John. Therefore, the position of the subject or object elements within an utterance determines the meaning. Similarly, the placement of Harry or John in a visual utterance that says "John sees Harry" suggests both subject and object relationships.

Similar visual/verbal parallels have been drawn using a system of linguistic analysis termed transformational or generative-transformational grammar. This system has provided teachers and students with a technique to explore what Noam Chomsky regards as an innate sentence generating capacity—a notion that confounds and bewilders some, delights and challenges others. A similar generative capacity, perhaps the same, enables us to generate visual statements. Chomsky, Zellig, Harris, and other transformational grammarians feel that all sentences (simple and complex utterances) are either *kernel* sentences or *transformations* of these kernel sentences; the kernel is finite. The student's task is to examine how more complex statements are modeled after the transformation of the simple utterance. Several projects in visual/verbal "branching trees" can suggest to the student how transformations can be built from a simple kernel visual statement.

Is there a visual language? Certainly. Both visual and verbal language involve thought processes which precede speech and writing (visual and verbal). Language, then, has a *deep structure* (a process of growth), and a *surface structure* (sounds, visual symbols) which com-

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[1]The term *visual language* is used here in the general sense. There are many visual languages: for example, "signing" (not finger spelling) used by the deaf, and the body languages of different cultures.

[2]Debes, J. L. "The Loom of Visual Literacy." *Audiovisual Instruction*, 1969, *14* (8), 25-27.

municate. A good visual statement--a picture, painting, or film--begins with an underlying idea--a kind of deep structure--from which the communicator develops a surface structure visual presentation.

Thoughtful visual communicators, for the most part, see the visual language paralleling verbal language in all basic ways. The "spoken" form of visual languages is body language, body signs, body English—the gestures, movements, postures we use deliberately or unconsciously, to communicate without or with accompanying words. Mimes, like Marcel Marceau, dancers, the deaf—for example--develop a high degree of skill and artistry in body language. It is supplemented by object language when objects are used deliberately to transmit meaning, or when physical or visual context is used to transmit meaning.

The "written" form of visual language is recorded images on film, videotape, paper, or other visual image carriers. Like verbal statements, visual statements have subject elements, predicate elements, and on occasion, object elements. These ideas may sound strange at first, but if your experience follows those of others you will become comfortable with the ideas and convinced of their rightness and their usefulness.

It may be useful to keep in mind a little triad of terms. *Visual literacy* is the attribute we would hope to find in every well-educated adult in our society. *Visual communication* is what the person is exposed to, or, when appropriate, uses himself. *Visual technology* is what makes "written" visual communication possible, and changes in visual technology alter the character of visual communication.

It is important to note that visual literacy fits within a broadened understanding of literacy. With this understanding in mind, it is possible to see a difference between what could be called the audiovisual viewpoint and the visual literacy viewpoint. Actually, the visual literacy point of view includes the audiovisual, but adds a new dimension. The concern of the audiovisual communicator in education has traditionally been to provide the teacher with superior messages that would transmit ideas more effectively to stu-

dents. The audiovisual viewpoint puts the tools of visual communication in the hands of the teacher; the visual literacy viewpoint puts the tools of visual communication in the hands of the students *and* the teacher, with emphasis on the student and what happens to him when he tries to communicate visually.

Why Visual Literacy?

Since the invention of photography, visual communication has been possible on a wide scale and has implied a growing visual literacy. However, just as widespread verbal literacy had to wait until printing was easy and typewriters were common, visual literacy didn't really become possible until visual communication was made easy by visual technology and possible on a mass scale. Nor was it so important prior to the arrival of the electronic age when visual stimuli permeate every corner of our lives.

For many years, schools have concentrated on the verbal skills—skill in reading, writing, speaking. The skills of visual literacy, though not recognized by this name, have traditionally been set aside as "extras" or reserved for those with "talent." Recently, educators have begun to realize that, first, this visual age requires visual as well as verbal skill of everyone, and, second, the verbal and visual skills are interconnected and both must be developed.

Three. Toward a Visually Literate Student

It has often been written—and restated in the rhetoric familiar to all who have attended 4 p.m. faculty meetings—that "every teacher is a reading teacher." If you think about it, it seems obvious enough: all teachers, on all levels, must be concerned about a pupil's ability to generate and process language, so that he may speak or write effectively and develop a better base for thinking.

Many of us, however, are all too happy to defer the responsibility for the linguistic competence of pupils to an English teacher whose daily raid on the inarticulate makes his job fascinating, rewarding, and frustrating. For this reason, English teachers were among the first to sense a more total language model, and through explorations, to turn to visual literacy activities.

Visual literacy suggests a broader model of discourse, a new literacy, intertwined with the "traditional" and important verbal language activities. Far from being a "retreat from the word," visual literacy activities draw on a multi-language model—a model firmly grounded in the total experience of children.

Many teachers feel that language is the core of study in most classrooms, that literature, reading acitivities, composition, are the primary manifestations of language. James Moffett, in one of the most important inquiries into discourse and the relationships between teaching and learning in the language arts, K-12,[1] suggests a broader, more integrative model which firmly roots visual literacy in a total school program. Moffett's model suggests a continuum of direct discursive experience for the learner involving literacy training to help a student participate more broadly in the creation of language—language used to translate and interpret his unique experiences. Through his visible language—his photographs, paintings, drawings—he shares in a universe of discourse, where he speaks *out*, "see *out*," and writes *out* in his efforts to bring order to his own particular experiences.

Photographs taken by children early in visual literacy programs seem to parallel what Piaget calls "egocentric speech," or what Moffett terms "interior dialog." But as students move through visual literacy activities, as they learn to report, to translate, to generalize, to organize, and to theorize about experience, as they move from simple photographs through the subtlety of a painting or a feature film, youngsters symbolize actual events, they fictionalize, they "language" on many levels as they extend their own abilities to communicate, both visually and verbally.

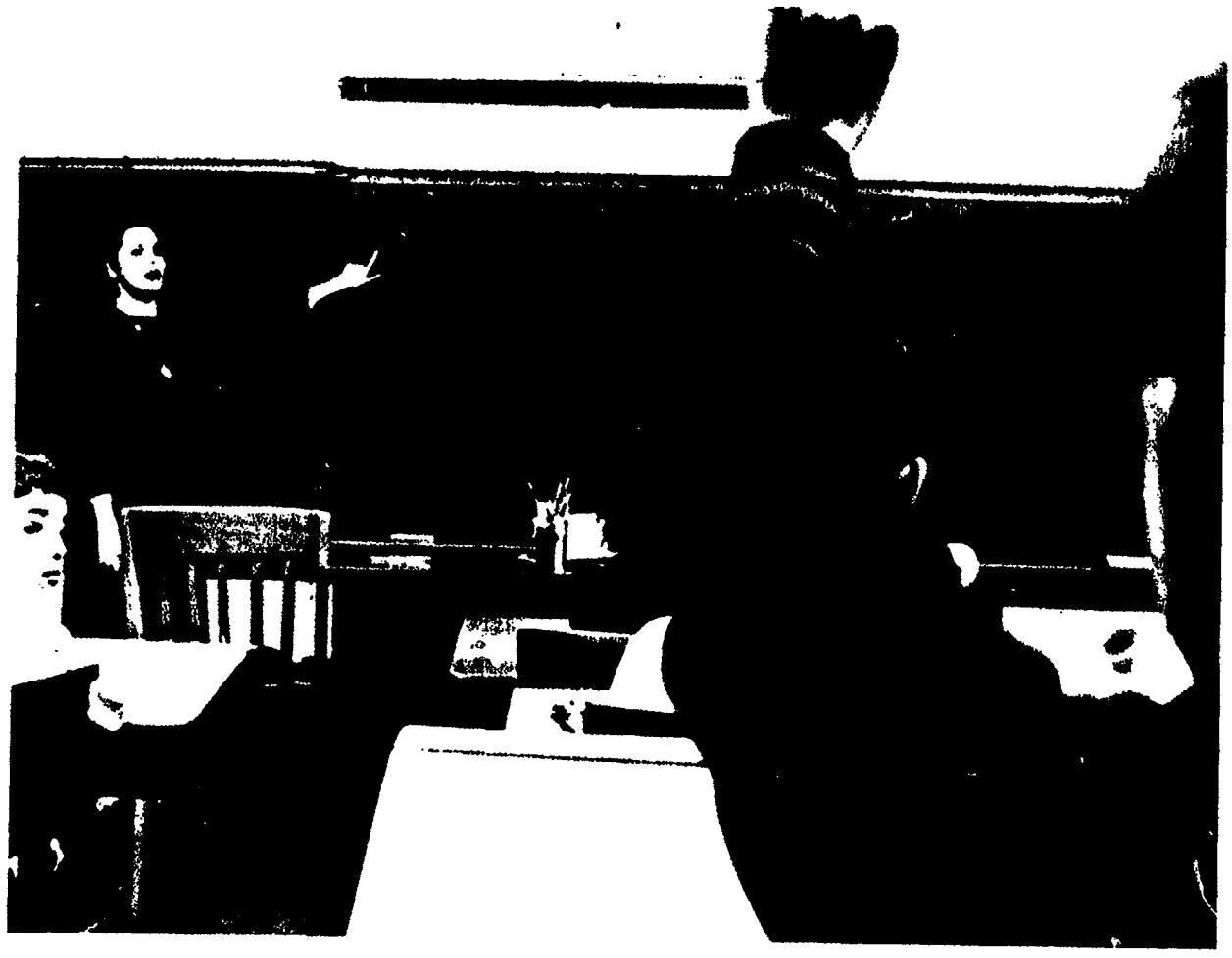
[1]Moffett, James, *Teaching the Universe of Discourse*. New York: Houghton-Mifflin, 1968.

Pictures in the Classroom

An early and helpful guide for teachers attempting visual literacy activities is Catherine M. Williams's *Learning from Pictures*.[2] Professor Williams's book suggests a number of practical ways teachers can make their classrooms more attractive visual environments. Teachers can, for example, select and mount simple and complex picture statements on bulletin boards, statements that challenge students to select and name objects, observe fine detail, relate picture statements to personal experiences, draw inferences, and do *Sesame Street*-type visual/verbal interpretive activities ("In this picture, is the giraffe higher than, lower than, or on the same level, as the camera?"). These ideas do not have to be confined to teacher-produced materials.

The richest picture source available is the student himself. That visually oriented youngster has been bombarded by thousands of hours of passive and active visual experiences prior to ever reaching the finger-paint-stained walls of kindergarten, yet rarely do we capitalize on that rich and varied visual experience. Because of their personal nature, student-made bulletin boards, displays,

[2]Williams, Catherine M., *Learning from Pictures*, Second edition. Washington, D.C.: Association for Educational Communications and Technology, 1968.



collages, filmstrips, or slide-tape presentations have far more learning impact than commercially produced materials can have.

Objectives of Visual Literacy Programs

As a general rule, when a professional teacher prepares to teach any new subject or skill, he wants clear objectives. It is a good idea for the teacher and students to work together to build mutually accepted learning objectives. This helps the child assess his progress through a sequence of learning steps or processes which bring inner and outer order to any learning task. Teachers today hear a great deal about the importance of planning and assessment; certainly this decade will make new demands on teachers to utilize all their resources and to evaluate student growth meaningfully and collaboratively.

When you become involved in visual literacy activities, you may select a number of initial objectives—cognitive and affective—as you begin to assess the entering behaviors of the pupils. Your selection of objectives will affect choice of learning options and resources, allocation of time, and methods of evaluation. Broadly speaking, you will probably be interested in selecting activities that will extend the latent visual literacy abilities of your pupils. You may want your students to understand relationships between visual and verbal language. You may want to provide activities that develop critical sensibilities of students so that they may effectively (and affectionately) select and evaluate their own communication events: their speech, writing, picture-taking, and visualizing.

You might state your own objectives upon entering a course in visual literacy as "to learn, to understand, and to develop skills in visual communications, skills that will permit me to provide students with learning opportunities leading to visual literacy skills that extend students' effectiveness in reading, creative-imaginative expression, and presentations."

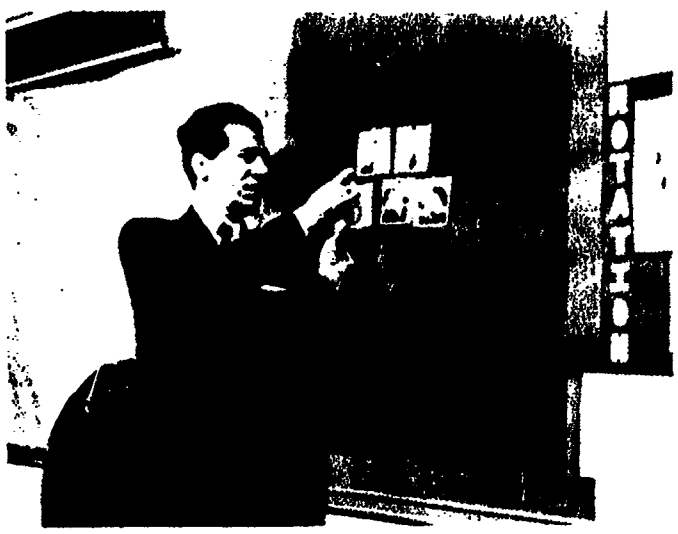
Student objectives might include:

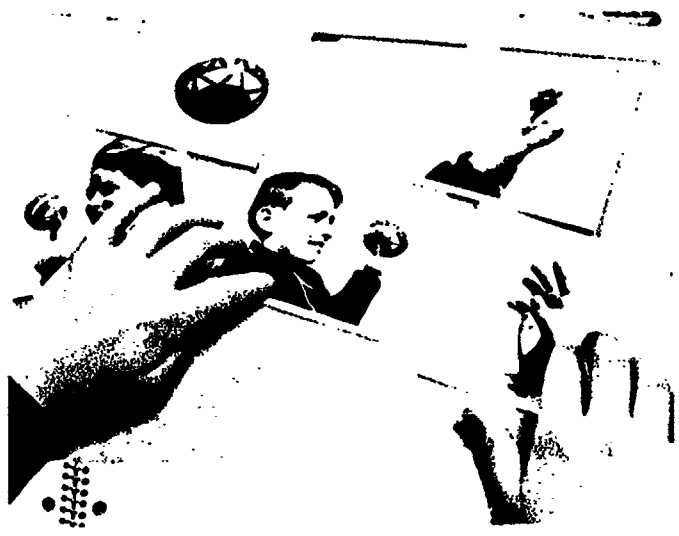
- To be able to *read* visuals made for intentional communication.
- To be able to *plan* visuals for intentional communication.
- To be able to *create* visuals for intentional communication.
- To be able to *combine* visuals and verbals for intentional communication.

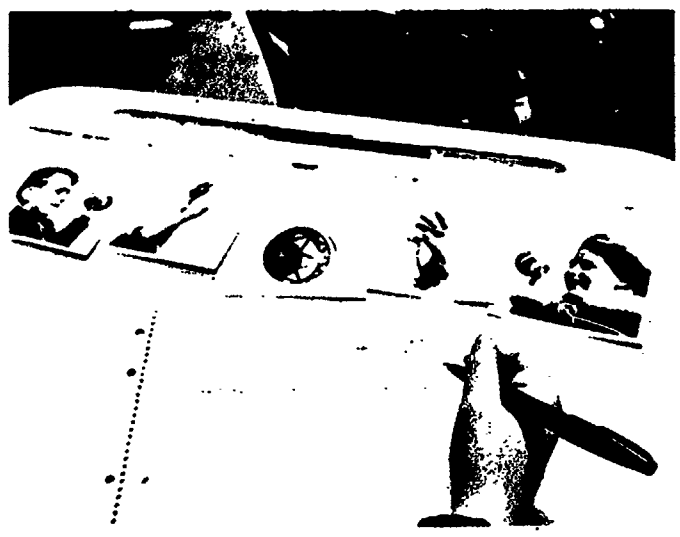
A useful and important distinction should be made for students and teachers between *structure*—the analysis of visual language and its elements—and *skills*—the development of a skill base to help youngsters generate visual language statements: photographs, films, etc. Both are independent of "subject matter," yet both are necessary to the development of a visually literate citizen. Skills keep visual language structure in action, invisible, so that it does not become mere data. The basic structure of visual language is a set of relationships between visual thinking, visual reading, and visual writing—the structure of discourse itself. It is vital to make the distinction without fragmenting visual learning; rather, connections between *structure*, or knowledge base, and *skills*, acting upon that knowledge, must constantly be made clear.

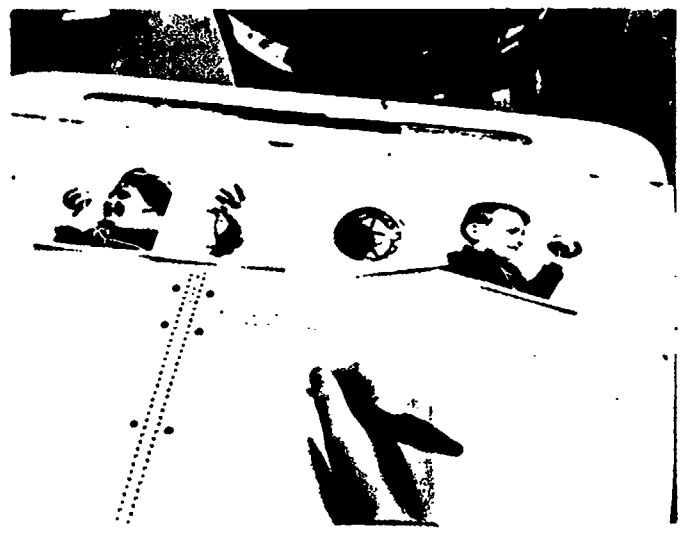
Sequencing

A particularly fascinating exercise for students in visual literacy programs involves the pupil in generating a sequence of still pictures to communicate intentionally a process, a story, a language event. Sets of pictures (Photo Story Discovery Sets, see p. 32) have been developed as sequence models for teachers and students. While challenging the learner to arrange the simple still pictures in a meaningful order, the sets also provide the teacher with an unusual opportunity to study the sorting process—semantic and linguistic—and all the often unstated reasons









for picture choice and rejection.

Paul Wendt in *The Use and Misuse of Language*[3] suggests that "pictures are...surrogates for experience." Wendt further discusses the important sense of language control (and self-power) that may occur when a youngster intentionally orders pictures to tell a story. Such a sequence shows that a youngster has internalized the reality of the pictures and the structure. Youngsters selecting and rejecting ("writing" and "erasing") still photographs are exercising powerful control of the language experience and the past tense of visual statement. The silent rejection of a photograph may have important semantic and cognitive overtones for the pupil who "rejects" a visual referent he cannot successfully internalize within that meaning context. In so doing, he brings inner order to the communication. That's language power!

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[3]Hayakawa, S. I. (Ed.) *The Use and Misuse of Language*. New York: Harper and Row, 1967.

". . .I'd like you to arrange these pictures in as many different ways as you can."

"Then write a sentence telling a story of each different arrangement."

"Now can you see that the pictures have subject elements, predicate elements, and object elements just like the written sentences?"

—from "A Visual Fable" filmstrip

Four. Visual Literacy and the Camera

Any new classroom activity makes unique demands on the professional skill (and often the patience) of the teacher. You are suddenly thrust into a new role. You have to extend your own professional skills to handle the new material sensibly and sensitively and at the same time provide linkages between the new curricular activity and the on-going program. A classroom experience using visual language will take you away from familiar terrain—the textbook, blackboard, and pencil. You will be placing the tools of communication into the hands of students while you act as guide and counselor.

You may choose communication tools in a great variety of media. Visual literacy programs have been conducted by having students make visuals by scratching acetate, painting on rolls of paper, or what have you. You may want to consult your school's art department or resource person for ideas (remembering that the goal is intentional communication, not decoration). Most visual literacy programs, however, are based on photographic or electronic media (still pictures, motion pictures, videotape). The base of mass communication is photographic and one of the goals of visual literacy programs is to enable students to understand and deal competently with the modern photographic, electronic world.

The camera is a visual pen we use to write about the world we see and to record some portion of reality that will transmit our thoughts by visual representation to another person at a later time. Whether done with a single picture or a series of pictures is unimportant. What is important is that we learn to "write" with the camera with maximum clarity. Just as it is necessary to practice writing with words, it is important to practice "writing" with a camera.

If you don't already own a camera, borrow or purchase one. The simplest one you can find will be satisfactory to begin with. Purchase a few rolls of black-and-white film and use them! Since most of us have used the camera for many years to record "Uncle Joe's visit" or the mountain peaks seen during the family vacation, we tend to look for such "special event" subjects and we find it difficult to use the events of a routine day for making a definite statement. Practice should help overcome this problem. After you have tried a few pictures and have at least overcome any hesitancy about holding, pointing, and shooting a camera, you are ready to take the next step.

Once you have decided to implement a visual literacy activity in your classroom or school it will be helpful to have a colleague to share in the experiment. You should consult a visual-minded fellow teacher, the school audiovisual department, the school

photography club and its sponsor. A visit and talk with a local photo dealer is important, also. In the upper grades, there may be accomplished photographers in the class, something to take into account when planning your program.

The Basic Test

Literally hundreds of shapes and sizes and qualities of cameras are readily available in stores today. They range in price from less than $1.00 to hundreds of dollars. If you are not one of the few who know what they are looking for, it is advisable to seek help from someone who has worked with cameras with children. A word of caution. Visual literacy is concerned first with visual communication and second with the visual as art. The knowledgeable photographer will tend to emphasize photographic quality which is not important to your purpose. What is important is to get a camera into the hands of as many students as possible and not to worry a great deal about loss of or damage to the cameras. The camera is a tool to be used. If a student is told too many times to be careful, he could grow to fear the consequences of scratching the case or be so awed by the mechanism that the worth of the camera--to make pictures—is never realized.

If you get help from a photographer in making a purchase, you should acquaint him with the special considerations for cameras to be used by students. The following comments are not technically complete but do give you some idea of what is available and serve to introduce the fundamental considerations to be taken into account when mixing students with cameras.

Types of Cameras

Basically, all cameras are composed of a box with a lens in a hole (aperture) with some means (a shutter) for letting light through to the film. There are many refinements and variations, but the simplest camera is a fixed-focus, single shutter speed, fixed f-stop (aperture) camera that ranges in price from $1.00 to $30.00. With a simple camera you can make fairly sharp pictures of still or slow-moving objects in outdoor light at moderate distances.

Generally speaking, as prices go up you get more versatility and durability and greater latitude in taking pictures of moving objects and under varying light conditions. At a list price range of about $35 to $70 you can get fixed-focus cameras with automatic exposure settings. These cameras are more versatile and, because the aperture and/or shutter speed changes automatically according to light conditions, they tend to be more foolproof.

From $70 and up, you will find cameras with rangefinders that allow you to focus through the viewfinder and lenses and apertures let you take pictures at closer range and vary the sharpness of the picture.

There are also self-processing cameras that produce a picture shortly after you have snapped the shutter. These cameras begin at about $17 list price for the simplest type and offer the variations available on other cameras as the price goes up.

Movie cameras also offer variations that affect the range of picture-taking distances and lighting conditions. Prices for the simplest movie cameras begin at about $20.

Special Features and Accessories

There are many different kinds of accessories for cameras, but only a few will be of interest, especially at the beginning.

Even simple cameras can take pictures at closer range with a close-up attachment. Close-up lenses are necessary for copying pictures so you will want to know whether close-up lenses are available for the camera you are considering and whether you can make or buy a stand on which to mount the camera for close-up copying work.

Flash capability allows you to take pictures indoors with a simple camera. Most cameras can be used with flash attachments or have built-in arrangements for taking flash pictures. If flash capability is not built in, the attachment usually adds $3 to $10 to the basic price of a camera. The price of the flash bulbs or cubes must also be taken into consideration.

A feature you may want to consider on movie cameras is a single frame shutter release. This is a simple override of the motion function in a movie camera that allows you to take one picture at a time. It is useful for making animated movies.

Film

There are two types of still pic-

tures usable in visual literacy programs: the color or black-and-white print and the color slide transparency. You will want to get detailed information and advice from a local supplier or specialist, but here are some general characteristics worth considering for three sizes of film most commonly used in still cameras.

	FILM SIZE		
	120 (roll)	126 (cartridge)	35mm
number of pictures per roll or cartridge	12 or 16	12 or 20	20 or 36
makes 2x2 slides (for standard projectors)	no	yes	yes
color or black-and-white prints	yes	yes	yes
relative print costs		about the same	
relative film costs per picture	medium	low	low
good for contact prints	yes	no	no
good for enlargements	yes	more difficult	more difficult

Movie film comes in different types, sizes, and reel lengths. Costs vary according to local conditions and should be checked with regional suppliers. Most student film production is now being done with super-8 film and cameras. Some schools still use the better but more expensive 16mm. Both color and black-and-white film is available in movie film.

Cameras for Students

The most important consideration in selecting a camera for student use is how easily a student can handle it. While children as young as six years have demonstrated that they can manipulate the settings on certain sophisticated cameras, it is nonetheless generally true that the fewer decisions required to take the picture the more attention is paid to the picture itself. The following are problem areas to check:

•*Ease of loading.* Cartridge film is the easiest to load.

•*The location of the shutter release lever* with respect to both the camera lens and the viewfinder opening. Try a camera, or preferably, have a youngster of the age group you are working with hold a camera and see if he can release the shutter without sticking unused fingers over the lens or viewfinder. Also, make sure the handling is comfortable and that the youngster doesn't have to strain to reach and release the lever. Such a problem can cause movement of the camera body and result in blurred images.

•*A clear viewfinder.* Many cameras have very small finders and some have viewfinder lenses that require accurate eye positioning before you can point the camera adequately.

•*Film advance and shutter interlock.* This prevents double exposure and is desirable for young users especially. This feature is not usually available on cameras under $5.

The instant picture making or self-processing cameras provide a finished picture almost immediately, a decided advantage if photo-finishing services are not readily available. Also, children tend to be impatient to see the results of their efforts, so if your budget can stand the slightly higher cost of camera and film, you may want to consider this type of camera.

When choosing a camera, consider the type of film it uses and what kind of processing you expect to use. Picture prints in color or black-and-white can be sorted and manipulated easily to develop variations of stories and they are preferable when used in reading programs where picture-story projects have talking or writing as a goal. Captioned pictures make fine display items for bulletin boards. The projected slide transparency, on the other hand, has a great appeal to youngsters and is useful when developing oral language skills as well as basic audiovisual communications techniques. Color prints or transparencies should be processed commercially. It is possible, but not necessarily preferable, to have students process their own black-and-white film.

Cost is something you should face realistically. Like any new program, visual literacy programs will almost inevitably create expenses you have not had before. Buy whatever you buy

The insects are cutouts that are photographed, then moved slightly, then photographed again, and so on, to make an animated film. A single-frame shutter release or movie cameras makes animation easy to do, but animation can also be achieved by very quickly pressing and releasing the motion picture shutter release.

Even very young children can use sophisticated cameras, but the more help they need from adults and the more settings they must remember, the less attention they will give to the purpose of picture-taking – communicating visually.

in the same way you approach other school purchases, with quality and sound educational experiences in mind. Choose sturdy simple cameras at the lowest price consistent with durability and general quality (not complexity).

Film Processing

It is wise to get in touch with resources for service and supplies as soon as decisions about the learning program have been made. For the photographic aspects of a visual literacy program, one of the most helpful resources may be the photofinisher—the owner or operator of the film processing plant at which the students' pictures will be printed. Large photofinishing plants have access to nearly all the materials and services you may need and they can sell to you directly, contracting on a long-term basis. Services and supplies you may obtain from the photofinisher include: cameras; film supplies priced not by the roll or order, but on the basis of a term or year contract; processing and printing service such that you can turn in film at 4 p.m. and pick it up (or have it delivered) next morning; cooperation in supplying information and guidance.

If you are unable to deal directly with a photofinisher, you should contact a photo dealer or a local drug store that provides photofinishing services. You may be able to obtain special rates and services for your program.

Student processing of film is time consuming and sometimes not very reliable. Contact printing is the easiest and the larger film sizes are desirable for both contact printing and making enlargements. With older students, in schools with photography club facilities, student processing may work well.

Books that Help

Basic and advanced photography manuals are plentiful and should be readily available. Try your local photographic dealer, book store, or drug store, and don't hesitate to ask the proprietor for assistance. Avoid the technical manuals until you really need them. Books on the fundamentals of making pictures, slides, or movies are all that is required to get started. Check the bibliography (pp. 24-25) for sources of assistance.

Special Sources for Student Cameras

Most medium-size cities have a variety of stores offering inexpensive as well as better quality cameras. It is, of course, better to make purchases as far up the line of quality as is possible in order to get the versatility and dependability that is usually related to dollar investment. In the beginning, however, the inexpensive camera ($3 to $5) may be acceptable, if you recognize that they may not last longer than a semester or two.

If your program has any promise for involving several teachers, it is possible to obtain case lot discounts on cameras that are usually distributed as prizes or awards in incentive programs. Since you will be buying substantial quantities of cameras, you may reasonably expect discounts on your purchase; speak to the owner of the firm you are dealing with about this.

Listed here are some inexpensive cameras and camera sources that you may wish to investigate. **The list is in no way complete by serves as a starting point.** Circumstances under which suppliers operate vary, so you will need to check on the details given here.

Some Very Inexpensive Cameras

•*The Workshop for Learning Things*, Education Development Center, 55 Chapel Street, Newton, Massachusetts 02160. The Workshop offers cameras to some schools in its service area for $.75 each, film for $.25 per roll and a complete array of inexpensive equipment and materials for processing your own film. The Workshop has a fine newsletter and easy-to-use manuals. Cameras and processing kits are available as Basic Kit with 12 cameras for $45.00 and Complete Kit with 35 cameras, film, and processing for $120.00. They usually supply the Diana Camera which uses 120 film.

•*Snap Shooter Camera Company*, 9810 Ashton Rd., Philadelphia, Pennsylvania 19114. Phone (215) 676-4400. The Snap Shooter is a unique camera that accepts a 126 film cartridge as the back of the camera. Although it has no shutter interlock, it has a film advance register that 4-year-olds have used successfully. The camera either assembled or disassembled (easy no-glue construction) sells for $2.00 or in lots of 25 cameras and

film for $1.50 per camera. The company also supplies free visual literacy activities suggestions. The camera has no flash capability and has fixed-focus, shutter, and f-stop.

•*Power Sales Company*, Box 113, Willow Grove, Pennsylvania 19090. Phone: (215) 659-2632. This company supplies case lots of the Diana Camera: camera—$.55 each in lots of 72; flash attachments—$.23 each in lots of 72; 120 Agfa film—$.20 per roll in case lots of 100. Film and flash attachments in other quantities are priced differently. This camera has two shutter speeds (instant and bulb), 3 f-stop settings, and three distance ranges of focus. It has no shutter/film-advance interlock but has been successfully used by 6-year-olds.

•*Imperial Camera Corporation*, 421 North Western Avenue, Chicago, Illinois 60612. Phone: (312) 829-2424. This company makes the Instant Load 900 Camera which sells for $3.50 each in lots of 48. This fixed focus, f-stop, and shutter speed camera has the following special features: uses 126 cartridge film, has shutter/film-advance interlock, good viewfinder and positioning of shutter release. It also accepts standard flash cubes but the cubes are turned manually after each shot.

Some Moderate Price Cameras

•Eastman Kodak Company, 343 State Street, Rochester, New York 14650 (consult Yellow Pages for local distributors). The Instamatic X-15 is a fixed-focus, fixed f-stop camera that uses 126 cartridge film, non-battery magicubes, has double-exposure prevention. Lists for $20.95 but should be available at around $17 including a roll of color film and cubes. The Instamatic 44, which lists at less than $10 for the camera alone, is similar but uses battery-flashcubes; this model is being discontinued but may be available.

•GAF Corp., 140 W. 51st Street, New York, New York 10020 (consult Yellow Pages for local distributors). The 136XF Color Outfit (includes one roll of color film and magicubes) is a fixed-focus, fixed f-stop camera that uses non-battery flash cubes, 126 cartridge film, has double-exposure prevention. It is unconditionally guaranteed for one year by GAF, lists at $18.95, should be available at about $13.

•Ritz Camera, School and Audio Visual Sales Department, 607 14th Street N.W., Washington, D.C. 20005, (202) 638-3220 This company currently has a Ubitel camera available for school use at about $15. It uses 120 film, has a variable focus lens (to f-4.5), variable shutter speeds and flash synchronization, and a self-timer.

(Note: Prices and information given here may have changed since this information was collected.)

Five. Some Successful Visual Literacy Programs

Since the visual literacy movement emerged in 1966, a number of schools and colleges have embarked upon projects or programs based on the visual literacy concept. It is remarkable, particularly in education, that nearly all projects have become permanent programs. These programs now range from early childhood education through college and beyond. Some schools and systems have extended visual literacy experiences to the whole curriculum, K-12. Some, for reasons of their own, have restricted the offerings to children in particular grades or at particular levels of development. Some of the programs are of a special-education character. Programs now exist for children having emotional problems, learning disabilities, reading problems, motivational problems, and for children who are deaf. Children having special advantages such as being bilingual have also been exposed to visual literacy programs. Finally, logically or not, having introduced visual literacy experiences to children with all kinds of "special" needs, there are even programs for "normal" children.

A few visual literacy programs are described below. Because of the range of programs, and the applications in some cases so special, no attempt is made here to list all types. What are described are a few outstanding programs at a few of the possible grade levels and application situations. If you wish to obtain information about an application area not covered in any of these descriptions, you can obtain additional information from the Center for Visual Literacy, Taylor Hall, University of Rochester, Rochester, New York 14627.

Green Chimmneys School, Brewster, New York

One of the earliest schools to become involved in visual literacy activities was Green Chimneys, a private residential school, under the leadership of Samuel B. Ross, Jr., headmaster. There, children worked with the earliest Photo-Story Discovery Sets and extended that work to the improvement of spoken and written language. The success of these ventures led the school to experiment with having the youngsters take pictures themselves and use those pictures as a base for their own speech and writing. Visual literacy activities at Green Chimneys are now very diverse. They have been extended to all the eight grades covered by the school.

Enfield High School, Enfield, Connecticut

The social studies program in Enfield High School involves 11th and 12th grade students in making slides and tapes and movie documentaries about problems of society. The proj-

ect is characterized by a unique collaboration between the students and their advisor, Franklin Gross.

Young people from this program have developed visual and verbal material for such associations as the National Association for Mental Health. A remarkable, student-produced brochure called "Cry Help" explains how to do a visual community survey on mental health services for adolescents.

North Reading, Massachusetts

This junior-high screen education program, now in its fourth year, is beginning to extend visual literacy experiences to a number of grade levels. This is a full-time program, with five classes a day. The student filmmaking program was initiated by Anthony Hodgkinson, developed with the cooperation of David Powell and, later, Charles McVinney. A report of the North Reading program is available under the title of "An Incident at Andover." Write to the Center for Visual Literacy, Taylor Hall, University of Rochester, Rochester, New York 14627.

Bilingual Education, Yettem School, Project TESOL

The concept that strengthening visual language makes it possible to strengthen a language of the home, such as Spanish, and therefore strengthen a second language, such as English, is one that was exemplified in the project developed by the Teacher Corps, Rural-Migrant, of the University of Southern California School of Education in Cooperation with the Cutler-Orosi Unified School District in Tulare County, California. The hypothesis was that the child who "suffers" from socio-economic-educational "disadvantage" does have a bank of environmental experiences, particularly visual experiences, which are not adequately tapped by traditional teaching techniques. For such children, the camera can become a primary means by which the child can conceptualize his ideas and thus share himself and his world with others. On the basis of pictures, it is possible for the child to have the excitement of discovery, interaction, and exploration of self in the external world which are so essential to the learning process. The Mexican-American children at Yettem School were only 30 in number, but as a consequence of the experiences of those children, and of the impact of the visual literacy program on them and their families, visual literacy programs are now being extended to many schools and to many other educational situations both bilingual and otherwise. A prime mover in this project, Patricia Heffernan-Cabrera, who was director,

Teacher Corps, Rural-Migrant, School of Education, University of Southern California 90007, has written a booklet about this project, now a national program. (See reference, p. 24.)

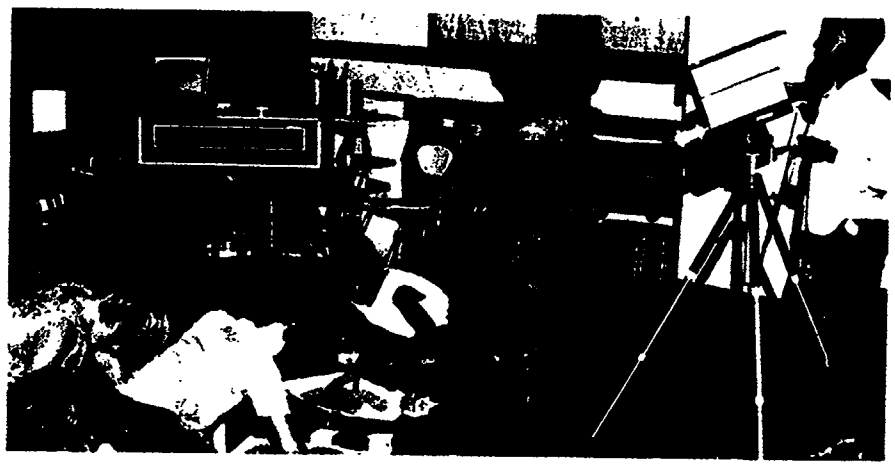
Sodus, New York

In the summer of 1969, under a grant from the New York State Center for Migrant Studies, State University College of Arts and Science, Geneseo, New York, a pilot project examined the relationships between visual literacy experiences and "traditional" verbal language skills. One hundred migrant pupils involved in a six-week summer school were randomly assigned to central and experimental classes. Comparison of scores on standardized reading tests and the Lowenfeld test of Visual Haptic Aptitude and Dailey Oral Language Facility Test showed that none of the children in the project's experimental classes scored lower than the children in the control classes and most scored higher, in some cases, dramatically so. Results were interpreted as suggestive of serious further study. Report available from Roger B. Fransecky (Director, University Media Services Center, University of Cincinnati, 45221), who served as project director.

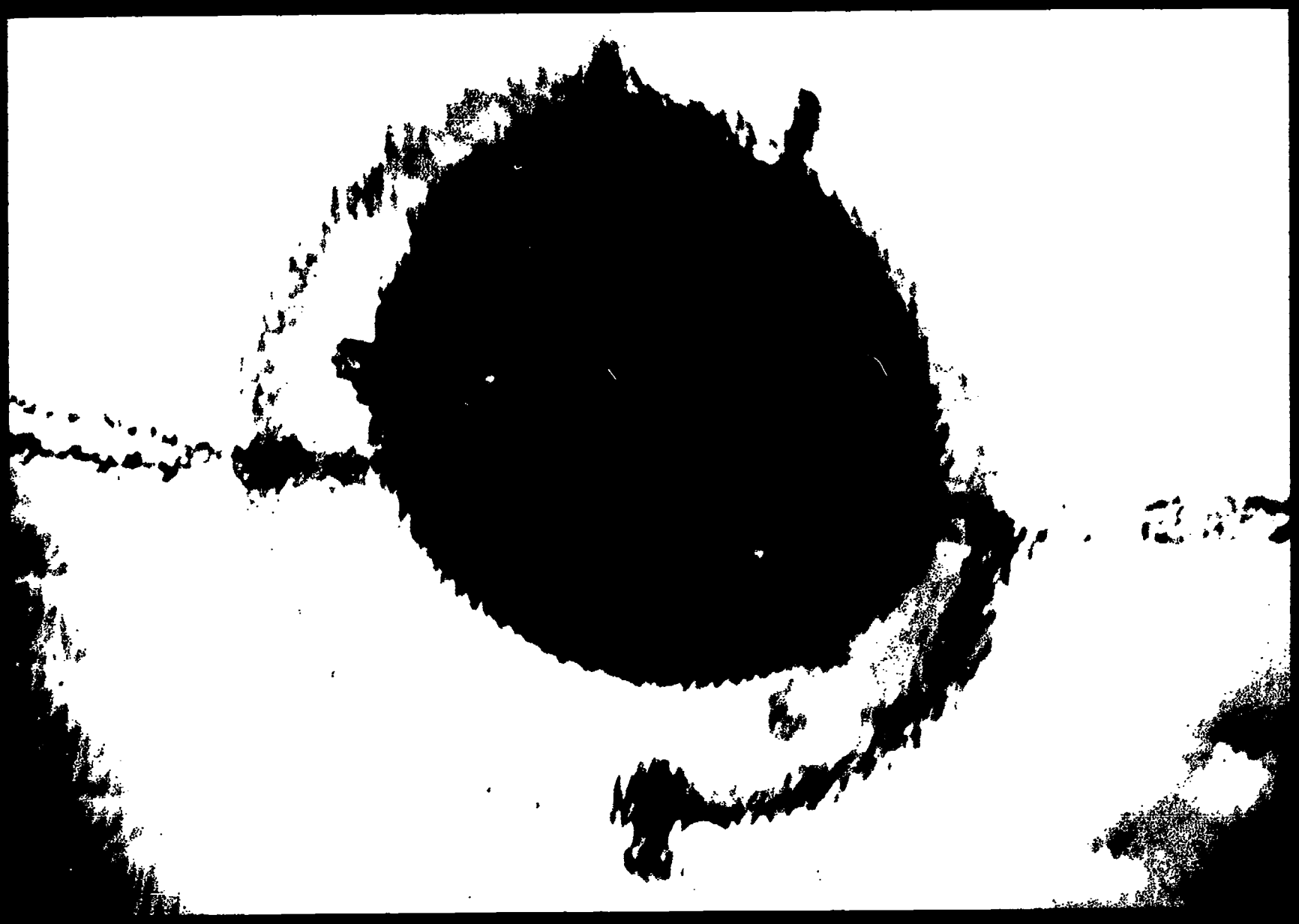
Milford, Ohio

The English department of the Milford, Ohio, schools with the cooperation of other departments has developed a sequential, K-12, visual literacy program centered in the English language arts area. A comprehensive curriculum model linking visual language activities, visual perception exercises, and student-produced visual materials has been developed. Research on the relationship between

visual training and performance on reading inventories was completed with a sample of 319 third-, fourth-, and fifth-graders. Results were analyzed to determine interaction between grade, sex, and visual literacy experiences. A report on the project and curriculum description is available from Roy Ferguson, Chairman of English, Milford School District, Milford, Ohio 45150.



Six. Some Experimental Questions: A Little About Research



Within the past few years some researchers have directed critical attention to the effects of visual literacy training on extending and enriching oral and written language facility, on developing self-concept, on heightening environmental awareness. Researchers have posited that when children are trained to use their existing "passive visual vocabulary" they can handle verbal language processes with more ease and purpose.

Researchers have studied the effects of using visual literacy training strategies with children who have had limited language experiences or have different cultural backgrounds, and, consequently, inadequate development of total English language skills. Because a disproportionate amount of emphasis is placed on verbal skill development, these children rarely have the opportunity in school to draw on their rich and varied visual experiences. Deutsch,[1] writing about learning and the disadvantaged child, suggests that learning is facilitated when a child's attention is drawn to "stimulation sequences." If some of a child's verbal communication skills are related to a passive visual language base, then a relationship between visual and verbal expressive skills is suggested.

Jerry Griffith and his colleagues at Eastern Illinois University have made use of linguistic measures of length and structural complexity of spoken language as dependent variables in research investigation in which visual language behavior is the independent variable.[2] Several studies have extended the metaphorical approach posited by Turbayne[3] who analyzes and details a relationship between visual and verbal language systems. Most research studies have explored the relationship between visual experiences and the verbal behavior associated with the visual experience. Research contrasting the length and complexity of visually stimulated oral language events, of the effects of training in visual sequencing, and of the relationships between pupil-generated pictures and the nature and spontaneity of language behavior, have occupied researchers since 1962. Further work needs to be done to establish a viable visual language model. The taxonomy developed by Moore (Appendix B, pp. 30-31) is a step in this direction.

Perhaps the most useful review of related research was completed by Clarence M. Williams, professor of education at the University of Rochester. Williams, who is also chairman of the Center for Visual Literacy, reported in 1970 a year's study of research in perception and perceptual development. He suggested a series of nine propositions[4] which should be helpful to anyone interested in undertaking research in visual literacy.

Proposition 1: Deprivation of early visual experience can lead to visual problems in the later life of the organism.

Proposition 2: Visual enrichment in early life appears to make an organism more successful in visual tasks in later life.

Proposition 3: It is probable that a program of visual enrichment can improve learning if effectively implemented.

Proposition 4: The ability to sequence visual stimuli is related to the experiences (history) and the opportunities provided for the learner.

Proposition 5: Development of the "Glance-Curve" is related to sequencing experiences and early reading-related experiences.

Proposition 6: Hierarchical potential in any pictorial scene or set of pictures is related to an organism's history, sequencing ability, and development of verbal literacy.

Proposition 7: The development of the ability to engage in visual metaphoric communications and activities is related to the development of verbal literacy.

Proposition 8: There exists a range of visual literacy sophistication and this range is related to history and opportunities.

Proposition 9: The ability to transfer back and forth among visual-visual metaphors, verbal-verbal, visual-verbal metaphors is related to visual and verbal literacy development.

Implicit in these propositions, and in the discussion so far, is the idea that visual literacy, itself, ought to be the subject of research. So far, because of the high esteem accorded to spoken and written verbal skills, educators have tended to ignore the advantages of developing children's visual literacy. Especially after the early grades, there is a tendency to minimize the visual aspects of communication and children are, in a sense, "weaned away" from pictures and illustrations, from drawing and illustrating their own work. This attitude has also influenced researchers' selection of questions for research projects.

Fortunately, there are areas of instruction—particularly what is commonly called screen education—where visual literacy per se *is* valued. An increasing number of schools and colleges provide young people with opportunities for screen or film study, partly because of the value of visual literacy alone—not to mention the cultural, aesthetic, and informational values of film.

One impediment to researchers in this area is that there are few answers to the question, How do you measure visual literacy? As soon as the question of testing is raised and discussion begins, it becomes apparent that many of the so-called tests of verbal skills are really testing cognitive skills. Then, we begin to see that some of these cognitive skills can be tested as well or better by visual means. This raises exciting possibilities. Meanwhile, however, the fact that handy tests just do not exist is enough to shape many of the research efforts made.

[1]Deutsch, M. "The Disadvantaged Child and the Learning Process." (See references, p. 25)

[2]Strandberg, T. E. "A Comparison of three Stimulus Media for Evoking Verbal Language Samples." (See references, p. 25).

[3]Turbayne, Colin Murray. *The Myth of Metaphor*. New Haven: Yale University Press, 1962. (Revised Edition: Columbia, S.C.: University of South Carolina Press, 1970.)

[4]Williams, Clarence M. "Nine Visual Literacy Propositions and Some Related Research." In C. M. Williams and J. L. Debes (Eds.), *Proceedings: First National Conference on Visual Literacy*. New York: Pitman Publishing Corporation, 1970.

Seven. Some Further Background Reading

Visual literacy is more than putting cameras in children's hands or giving children pictures to arrange in some order. The following reading will help you deepen and broaden your own understanding of visual literacy. Each of these books, articles, or reports, was selected because it develops some fundamental point relative to the concept of visual literacy. Annotation has been provided where it seemed useful.

A. General Reading

Audiovisual Instruction, 1969, *14*(8).

Debes, J. L. "The Loom of Visual Literacy." Pp. 25-27.

Fransecky, Roger B. "Visual Literacy and Teaching the Disadvantaged." P. 28-31, 118.

One of the most significant areas of application of the visual literacy concept has been compensatory education. One of the earliest projects was the one recorded here in which the children of migrants, having reading difficulties, achieved remarkable scores in reading based on standardized scores.

Katz, Sheldon. "Turning the Kids On with Media Methods." Pp. 48-51.

Parkinson, Robert. "Gaining Visual Literacy Through In-Service Training." P. 128.

Powell, David J. "An Experiment in Visual Literacy." Pp. 32-33.

Birdwhistell, Ray L. *Kinesics and Context*. University of Pennsylvania Press, 1970. (Paperback)

As a research social psychiatrist, Birdwhistell is our most profound student of body language and its implications. Birdwhistell's "Kinesics" deals with body language manifestations of inner inclinations to communicate; visual literacy deals in part with intentional communication using body and object language. Accordingly, the introductory sections of this book, especially 1-11, 26-28, and in the Appendix, the introductory note and section 1, are all pertinent.

Fast, Julius. *Body Language*. New York: Simon & Schuster, Pocket Book, 1971. (Paperback)

Entertaining reading along the theme that you betray your inner self with your body language and your friends betray themselves to you if you know how to read their actions. Deserves skimming.

Frostig, M. and P. Maslow. "Language Training: A Form of Ability Training." *Journal of Learning Disabilities*, 1968, *1* (February), 15-24.

Haber, Ralph Norman. "How We Remember What We See." *Scientific American*, 1970, 222(5), 104-112.

Heffernan-Cabrera, Patricia. *Visual Literacy and the Classroom*, 1972 (Center for Visual Literacy, Rochester, N.Y. 14627.)

Hodgkinson, A. W. "The Scope of Screen Education," *Audiovisual Instruction*, 1968, *13*(1), 16-18.

Kees, Weldon and Jurgen Ruesch, Jr., *Nonverbal Communication*. Berkeley: University of California Press, 1956.

Kelley, E. C. *Education for What is Real*. New York: Harper, 1947.

Kolers, Paul A. "Bilingualism and Information Processing." *Scientific American*, 1968, *218*(3), 78-86.

Turbayne, C. M. *The Myth of Metaphor*. Columbia: University of South Carolina Press, 1971. (Paperback)

Fundamental reading. Provocative reading! The best source of a philosophical and logical foundation for visual literacy thinking. Read the introduction and the chapters entitled "Ordinary Language" and "Visual Language." The rest of the book is good reading too but the foregoing recommendations are vital. Read for a firm understanding of the concept that what we see or hear is not the reality, but a sign for reality which we "read."

Williams, Clarence M. and John L. Debes (Eds.) *Proceedings: First National Conference on Visual Literacy*. New York: Pitman Publishing Corporation, 1970.

(Available from the Center for Visual Literacy, Taylor Hall, University of Rochester, Rochester, New York 14627.

The only collection so far of theory, construct, research, and practice. What has been considered and rejected, what has been tried and failed, as well as

what has succeeded can all be found in this book. If you are constructing a program for schools, this is must reading. Some of the papers include classroom procedures detailed step by step.

B. Practical Techniques

The following are handbooks or manuals that go into the mechanics and details of organizing some kinds of visual literacy programs.

Allen, Don. *The Electric Humanities: Patterns for Teaching Mass Media & Popular Culture.* Dayton, Ohio: Geo. A. Pflaum, 1971.

Anderson, David R. and Gary Wilson. *Visualize.* (Instructor and student manuals.) Dayton, Ohio: Pflaum/Standard, 1971.

Craig, Walter. *Learning Photography.* Columbus, Ohio: Grid, Inc. 1971. A 58-page linear programed text, now in its second printing, presents the basic skills of camera operation. (4145 North High Street, Columbus, Ohio 43214.)

Goldman, Frederick and Linda R. Burnett. *Need Johnny Read? Practical Methods To Enrich Humanities Courses Using Films and Film Study.* Dayton, Ohio: Pflaum/Standard, 1971.

Kuhns, William and Robert Stanley. *Exploring the Film.* Dayton, Ohio: Pflaum/Standard, 1968.

Larson, Rodger and Ellen Mease. *Young Filmmakers.* New York: Avon Press, 1969. (Paperback)

Lownders, Douglas. *Film Making in Schools.* New York: Watson-Guptill Publications, 1968. London: B. T. Batsford, Ltd.

Rynew, Arden. *Filmmaking for Children.* Dayton, Ohio: Pflaum/Standard, 1961.

Spolin, Viola. *Improvisation for the Theater: A Handbook of Teaching and Directing Techniques.* Evanston, Illinois: Northwestern University Press, 1963.

C. Research

The following are selected readings on research in visual literacy.

Ammons, R. B. and C. H. Ammons. *Quick Test (QT).* Missoula, Montana: Psychological Test Specialists, 1965.

Debes, J. L. *Visuals Are a Language,* (periodical). Rochester, N.Y.: Eastman Kodak Company, 1967 and after.

Deutsch, M. "The Disadvantaged Child and the Learning Process." In *Education in Depressed Areas,* edited by A. Harry Passow. New York: Columbia University, Teachers College, 1963. Pp. 163-179.

Dunn, L. *Manual for the Peabody Picture Vocabulary Test.* Minneapolis: American Guidance Service, 1965.

Fransecky, R. B. "The Effect of Visual Literacy Training on the Linguistic Development of Third, Fourth, and Fifth Graders." Unpublished doctoral dissertation, University of Cincinnati, 1970.

Herman, D. T., R. H. Lawless, and R. W. Marshall. "Variables in the Effect of Language on the Reproduction of Visually Perceived Forms." *Perceptual and Motor Skills,* 1957, 7, Monograph Supplement 2, 171-186.

Miner, L. E. "Scoring Procedures for the Length-Complexity Index: A Preliminary Report." Charleston, Ill.: Eastern Illinois University, Department of Speech Correction, 1968.

Mintun, S. "A Comparison of Three Stimulus Media for Eliciting Verbal Language Samples from EMH Children." Unpublished master's thesis, Department of Speech Correction, Eastern Illinois University, Charleston, 1968.

Morris, H. L. "Communication Skills of Children with Cleft Lips and Palates." *Journal of Speech and Hearing Research,* 1962, 5, 79-90.

Prentice, W. C. H. "Visual Recognition of Verbally Labeled Figures." *American Journal of Psychology,* 1954, 67, 315-320.

Randhawa, B. S. "Intellectual Development and the Ability To Process Visual and Verbal Information." *AV Communication Review,* 1971, 19, 298-312.

Shriner, T. and D. Sherman. "An Equation for Assessing Language Development." *Journal of Speech and Hearing Research,* 1967, 10, 41-48.

Strandberg, T. E. "A Comparison of Three Stimulus Media for Evoking Verbal Language Samples." Unpublished master's thesis, Eastern Illinois University, Department of Speech Correction, Charleston, 1969.

Templing, M. C. "Certain Language Skills in Children: Their Development and Interrelationships." Institute of Child Welfare Monograph Series, No. 26. Minneapolis: University of Minnesota Press, 1966.

A more complete bibliography of visual literacy research is available from the Center for Visual Literacy, Taylor Hall, University of Rochester, Rochester, New York 14627. In addition, the visual literacy materials handled by AECT may also be useful. See Appendix C, p. 32.

Eight. Afterward

Visual literacy is a relatively new concept and both theory and practice are undergoing change. Much remains to be discovered. Much remains to be developed. If you decide to involve yourself in activities in this field, please bear in mind that what you are doing may be being done for the first time in that particular way. Consequently, your experience may be unique and significant to others. Do keep records of what you do, and do plan to share what you learn with others carrying out programs in this field.

This booklet suggests numerous places to go for additional information. To share your information with others, contact the authors of this booklet or the Association for Educational Communications and Technology, Visual Literacy Task Force. (Addresses are given in the front.) We look forward to hearing from you. Immense opportunities exist for you and your students in this exciting new field. Visual literacy holds bold promise for teachers committed to making sense of life to youngsters, to help learners order materials of their own world, and to discover what has not yet been. In all visual activities we echo Michelangelo who said at age eighty: "Ancora imparo—I am still learning."

Nine. Appendices

A. Some Modes of Visual Communication[1]

When we communicate verbally, whether speaking or writing, we have in mind some purpose, unstated or specified, which affects the way in which we present our message. As receivers of a verbal message, we generally have some idea of the purpose of the author of the message. We can categorize the message as, for example, a shopping list, a description of a trip or an operation, a research report, a letter of complaint, directions for getting to the airport, a short story, and so on. In teaching reading or writing we often find it useful to ask our students to identify the purpose of a message or to produce a message for a specific purpose ("write a paragraph describing your best friend," "compare agricultural with industrial society," "give the sequence of events in cell division," etc.). Likewise, when we communicate visually, whether as originators or receivers of a message, we can identify or categorize the message according to its purpose and select (or interpret) visuals for that purpose.

The following are some suggested purposes or modes of visual communication and some ideas about how to achieve those purposes visually.

Definition

In a dictionary we describe a word—an action, concept, thing—in words. Visually, we would define an action or thing or whatever in pictures. A collection of pictures that define something would be a "pictionary" definition, and a collection of such definitions would be a "pictionary."

Description

When we describe something, we tell what it is like. We can do this with pictures just as we can with words. In *description*, we can describe whatever aspect of a thing we want. In *definition*, we want the "reader" of our visual to be able, when he sees an example of what we are describing, to place it in the category we are defining. For example, if we are defining *dog* for a person who does not know what a dog is, we could not define a dog by showing a picture of our dog Rover; we should have to show many pictures of different dogs in many situations, perhaps comparing dogs with a similar animal that the reader knows. However, if we simply want to *describe Rover*, a picture of Rover will probably do the job.

Enumeration

Verbally, we select from a population items of every kind, making an effort to miss none of them. In other words, we make a list. Visually, the same thing is accomplished with a series of photographs, each one representing one individual or item in a situation.

Spatial Arrangement

We might express this kind of information verbally in a paragraph or perhaps in verbal descriptions associated with a map. Visually, we can do this by arranging pictures over an area that corresponds approximately to the location of the real item or individual within the real space.

Comparison

Verbally, we identify aspects of difference between two similar items and by our verbal descriptions, draw close attention to and appreciation of the differences. Visually, we do something comparable, selecting a point of view or points of view that emphasize the differences.

Categorization

Verbally, we identify, through careful description and comparison, items or individuals in a population that are identical. Visually, the proc-

[1]This section is adapted from Debes, J. L., "Some Semantics of Visual Communication." Unpublished paper presented at the Conference of the International Society for General Semantics, Denver, Colorado, August 1968.

ess calls for comparison of visual aspects of the individuals and the selecting-out of identical members.

Traveling Eye (Exploration)

Verbally, a paragraph or several paragraphs might be used to recount a visit, walk, voyage, into an unknown or relatively unexplored area. This could be done in the micro as well as the macro dimensions. Visually, the camera can be moved around and into such a situation with comparable effect.

Chronology or Process

For this semantic view of the world the verbal communicator selects events and describes in the order in which they happen those aspects of the events that lead developmentally to the last state about which the communicator wishes to comment. Visually, the chronology or semantic sequence presents challenges or difficulties. To someone unfamiliar with visual communication it might seem sufficient merely to photograph each "stage" in order. Everyone who has ever tried, however, knows that the stringencies of visual ordering require the utmost care in the selection of both aspect and time. The skilled visual communicator may not have read semantics, but he knows with remorse that $Smith_1$ is not $Smith_2$ and $Smith_2$ is not $Smith_3$ and so on. The sad experience of having to discard pictures not quite right in chosen aspect or not quite right in moment of time has made him more wise. Perhaps nowhere more than in photography does the rightness of Korzybski's characterization of man as a time-binder seem more plain!

Idealization

In the endeavors of man, the effort to achieve something better is an effort toward an ideal—perhaps unconsciously conceived, but an ideal nonetheless. In describing a biological process—for instance, the development of a leaf of a particular tree—the biologist can state what steps are typical and what eventuation is typical. In writing of these things, we choose words to outline, logically or chronologically, the way things would be if the "typical" or the best would occur. By our choice of words, the order of our sentences, the clarity with which we see the process, we project an image of the ideal—or an imperfect image. The same process occurs in visual communication. The perfect run of a downhill skier never occurs. But, from a carefully selected set of pictures something very close to the ideal run can be communicated visually. What is required is a careful selection of aspect and time and elimination of the imperfect or atypical.

Directive Utterances

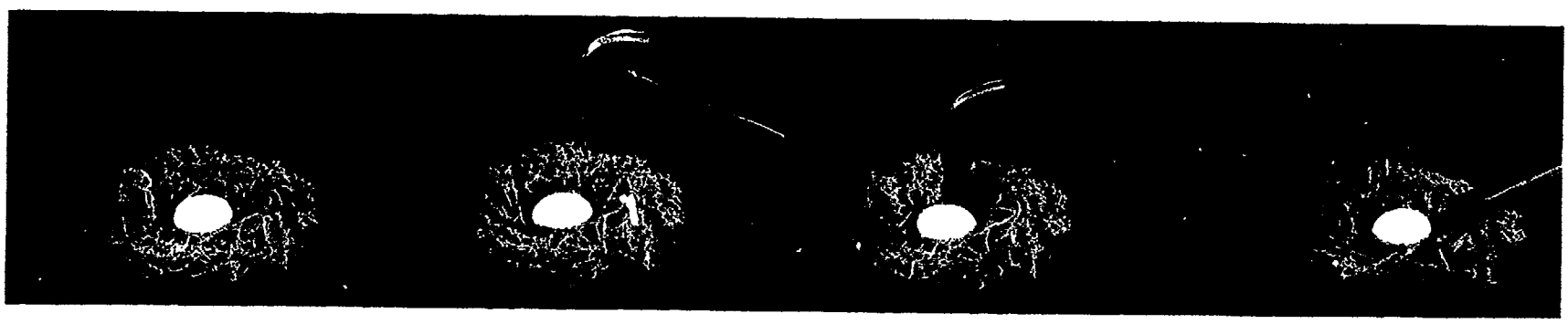
We spend much time in persuasion or direction, telling people to do something or persuading them to do it. The nature of the verbal communication depends upon the audience. We don't use the same selection of words, arrangement of sentences, or selection of ideas for children as we do for adults, for housewives as we do for professional men. The goal is to get someone to do something we think should be done either in concert with us, in group activity which does not include us, or alone. Visual communication goals are similar and the selection of visuals to direct or persuade, visuals that will appear cogent to the intended audience follow similar rules for success. The order in which visual statements are presented may not be logical in order to be most cogent. The intent may be to prey upon fears, prejudices, enthusiasms, loves, and so on in order to carry the point.

Fiction

Robert Louis Stevenson rewrote portions of *An Inland Voyage* eight times in order to create the precise impressions and moods he wanted. What he finished with bore little resemblance to the voyage he actually took. It was a confabulation tailored with exquisite care for the feelings and images that would be created in the minds of his readers. Visual confabulations follow similar rules and require as great or greater attention. Theater-goers who have seen *Elvira Madigan* or *The Plow that Broke the Plains* know that they have seen the work of an author of fiction, whether visual or verbal or both.

Personal Emotional Expression

Between an "ouch!" to a bark in the shins to "how do I love thee, let me count the ways" is a gamut of verbal expression from the inarticulate-spontaneous to the articulate-contrived, from lugubrious to noble. The primary source is strongly felt emotion; the primary intent is to let someone know how deeply the feelings are held. In visual literacy a similar range occurs from the visual expression of "ouch" to the visual statement of the tenderest or highest feelings, and the goals are the same—to share, spontaneously or deliberately, feelings strongly held.



B. Perceptual Development

As every teacher knows, children develop abilities gradually, each child growing according to his unique possibilities and circumstances. Along with individual differences, there is a general sequence of development which enables an informed observer to estimate the developmental level of a particular child or group of children. In designing instruction or planning an instructional program, it is necessary to know where the students are, where they have been, and where they may be expected to go in terms of the instruction. Otherwise, they may not benefit from the instruction.

Reprinted here is a proposed taxonomy of perception[1] which traces the development of perception from its beginning to full development. This model is not limited to visual perception, but includes auditory and other perceptual modes as well. Perception, in this taxonomy, is viewed as operational. It includes "awareness" (or attention) on the input end and "behavior" on the output end. Perception, then, is identified as a process of information extraction, and its domain comprises all forms and products of behavior concretely related to information extraction. (The perceptual-motor domain is distinguished from the cognitive domain in that the latter refers mainly to judgments made from memory and to memory operations performed in the absence of the stimulus.)

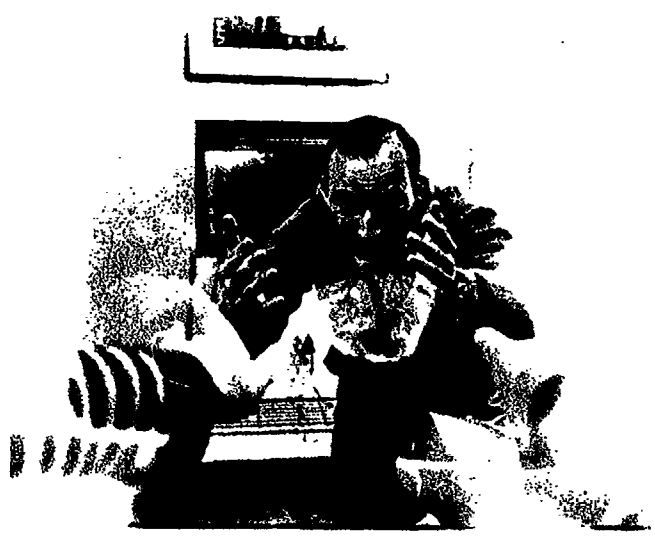
[1]Moore, Maxine Ruth. 'The Perceptual-Motor Domain and a Proposed Taxonomy of Perception." *AV Communication Review*, 1970, 4, 379-413.

I. Sensation. Behavior that demonstrates awareness of the information aspects of the stimulus energy
  A. Detection and awareness of change. Detection threshold measures in all sensory modes
    1. Ability to specify the attribute that has changed
    2. Ability to specify the direction of change
    3. Ability to specify the degree of change
II. Figure Perception. Behavior that demonstrates awareness of entity
  A. Discrimination of unity; discrimination threshold measures in all sensory modes
    1. Ability to judge brightness as a property of the stimulus under varying illumination
    2. Ability to judge distance and location of light and sound
    3. Ability to judge tactile form qualities such as hardness, sharpness, etc.
  B. Sensory figure-ground perceptual organization
    1. Awareness of the relationships of parts to each other and to the whole
    2. Awareness of relations between the parts and the background, matrix, or context
  C. Resolution of detail
    1. Response to detail within the sensory (visual and auditory) world
      a. Ability to judge size as a property of the stimulus at various distances
      b. Ability to judge shape as a property of the stimulus regardless of orientation
      c. Tests of field-dependence
      d. Tests of spatial orientation
      e. Other
    2. Response to detail within the sensory (visual and auditory) field
      a. Ability to discriminate symmetrical figures
      b. Ability to discriminate asymmetrical figures
      c. Ability to perceive rapidly successive bits of information
      d. "Nonsensory" figure-ground segregati...
      e. Other
III. Symbol Perception. Behavior that demonstrates awareness of figures in the form of denotative signs when associated meanings are not considered
  A. Identification of form or pattern and relation of discrete information into visual, auditory, and tactile forms; recognition thresholds in all sensory modalities
    1. Ability to distinguish curves from rectangles
    2. Ability to distinguish triangles from squares
    3. Ability to identify letters and digits
    4. Ability to respond appropriately to gross facial expressions
    5. Ability to distinguish tones in a musical chord
    6. Ability to abstract a melody line from its variations
    7. Ability to distinguish color components of a visual spectrum or composition
    8. Ability to respond appropriately to verbal directions
    9. Ability to respond appropriately to written directions
    10. Other

B. Naming and classification of forms and patterns
   1. Ability to recognize faces and identify people by name
   2. Ability to identify simplifications and schematic drawings
   3. Ability to name complex objects, pictures, places, melodies, tastes, odors, etc.
   4. Ability to read and comprehend concrete nouns and verbs denoting physical activity
   5. Ability to indicate similarities and differences between visual, auditory, or tactile forms or their representations and to classify them
   6. Other

IV. Perception of Meaning. Behavior that demonstrates awareness of the significance commonly associated with forms and patterns and events and the ability to assign personal significance to them; interpretive ability
   A. Mental manipulation of the identified form or pattern
      1. Ability to reproduce forms, tunes, or syllables by memory
      2. Ability to overcome the constancies of brightness, color, size, and shape
      3. Other
   B. Ability to attach significance to a symbol and to relate symbols to achieve a significant synthesis
      1. Understanding of the various parts of speech; comprehension of language
      2. Ability to make simple associations in all sensory modalities; e.g., clouds mean rain, smoke means fire
      3. Ability to understand verbal imagery, similes, metaphors, analogies, and other figures of speech—connotative meanings
      4. Other
   C. Ability to attach significance to a series of events occurring over a period of time
      1. Insight into cause and effect relationships
      2. Discovery of new relationships
      3. Ability to generalize, understand implications, and make simple decisions
      4. Other

V. Perceptive Performance. Behavior that demonstrates sensitive and accurate observation, ability to make complex decisions where many factors are involved, and ability to change ongoing behavior in response to its effectiveness
   A. Demonstration of a successful analytical or global approach to problem solving in all areas of endeavor
   B. Diagnostic ability with respect to mechanical or electrical systems, medical problems, artistic products, etc.
   C. Insight into personal, social, and political situations where awareness of attitudes, needs, desires, moods, intentions, perceptions, and thoughts of other people and oneself is indicated
   D. Demonstration of artistry and creativity in any medium
   E. Other



C. AECT and Visual Literacy

The Association for Educational Communications and Technology (AECT) is an organization of professional educators, in the schools and elsewhere, who are responsible for the design and management of technology-based instruction and instructional materials. The Association traces its origins to a group of educators who were interested in visual instruction. Over the decades, the organization's efforts to improve instruction expanded to the many applications of technology to the teaching-learning process. And, since people and how they learn are determining factors in any kind of instructional system, the basic human function of visual learning has remained a central concern of the Association.

Recently, this concern has taken the form of what is called "the visual literacy movement." It began tentatively in 1965 and 1966 with correspondence and telephone calls among Association members and others who were working with visual means of instruction. The appearance of the first issue of *Visuals Are a Language*, in 1967, focused these exploratory efforts in the office of Jack Debes at Eastman Kodak.

Interest in visual literacy increased and at the annual meeting of AECT in the spring of 1968 (AECT at that time was called the Department of Audiovisual Instruction), someone suggested there ought to be some kind of exploratory get-together. An informal committee including Richard Nibeck, deputy executive director of AECT, was formed and a meeting was held in August 1968 at the University of Rochester. It was at that meeting that the decision was made to call the first national conference on visual literacy, and AECT immediately became one of the sponsors.

The first National Conference on Visual Literacy was held in March 1969, at Rochester, N. Y. Since then, conferences have been held annually —at Chicago in April, 1970, Asilomar, California, in March 1971, and at Cincinnati, Ohio, in March, 1972. The national organization of the same name was recently organized as a separate entity and includes AECT representatives on its governing board.

AECT, in addition to its contributions to the National Conference, conducts its own visual literacy activities. Programs related to visual literacy are a part of the annual AECT convention conference. It was at the 1968 annual meeting in Houston that the first major presentations were made bearing the name "visual literacy." Within AECT's organizational structure there is a Visual Literacy Task Force which recommends, develops, and assists with activities related to visual literacy. This booklet is one outcome of the Association's concern with visual literacy.

The Association's publication program includes many materials useful to educators interested in visual instruction programs. The monthly magazine, *Audiovisual Instruction*, carries frequent articles describing visual literacy programs, and the research quarterly, *AV Communication Review*, includes reports of original research of significance to visual learning.

Other materials produced or published by AECT on the subject of visual literacy include:

Audiovisual Materials

Photo-Discovery Sets. These sets of pictures, each on a 3½-inch square card, provide youngsters with the opportunity to "write" their own stories by arranging the pictures in sequence. The incidents pictured are familiar to most children and provide variety in terms of complexity and judgments required. One set, instead of inviting story-telling, encourages concept-development by requiring children to sort the pictures into categories.

Making Sense Visually and *How Does a Picture Mean?* are two filmstrip sets that teachers can use to help students understand some of the underlying principles of visual communication.

A Visual Fable is a filmstrip set for orienting instructional staff to visual literacy programs. The visuals and recorded narration trace the development of visual literacy in an individual and suggest some ways education can help enhance individual visual literacy.

Putting New Excitement into School Pictures is a filmstrip and record set that presents some ideas for improving communication through pictures in school publications.

The Simple Camera contains 12 filmstrips and 5 manuals which make up a 12-unit course suitable for teaching youngsters some basics of picture taking. The course is designed for use by teachers and students who have had little or no photographic experience.

Rhetoric of the Movie is an introduction to communication by motion picture. The set uses six super-8 films and an instructor's manual to present some fundamentals of movie making, relating the process to verbal communication.

The Growing of a Young Filmaker is a 16mm film by and about a high school dropout who became involved in a filmmaking program for young people. It is of interest to high school students engaged in filmmaking and serves as orientation for teachers involved in visual literacy programs.

Hey, Look at Me! shows elementary school children making their own films in a community in Appalachia. The film is 16mm color.

This Movie is About Light is a 16mm color film showing a teacher and her inner city first graders who develop reading skills while making a movie about light.

Books

Research, Principles and Practices in Visual Communication presents fundamental concepts of communication, visual perception, and design based on research and theoretical considerations.

Learning from Pictures suggests ways pictures may be used in teaching children at all grade levels, in many different subjects.

(The above materials may be obtained from the Association for Educational Communications and Technology. For prices and ordering information, write to AECT, Publications Department, 1201 16th Street NW, Washington, D.C. 20036.)

Photo Credits

(Photographs are listed and described by chapters, left to right, top to bottom, in the order in which they appear.)

One. Boy painting, from AECT. Group, by Daniel J. Ransohoff, University Media Services Center, University of Cincinnati. Headstone, by youngster on sixth grade social studies field trip. Kittens, by eleven-year-old boy.

Two. Balloons, by Parkdale (Maryland) high school students for animated documentary film "The Art of Aerostation." Girl painting, from "How Does a Picture Mean?" (AECT), originally created by Eastman Kodak. Marcel Marceau, courtesy of *The Washington Post*. Boys reading comics, from "How Does a Picture Mean?" (AECT), originally created by Eastman Kodak. "Stop" object language series, from "Making Sense Visually" and "The dog/plays with/the turtle" series, from "How Does a Picture Mean?" (AECT), originally created by Eastman Kodak.

Three. Contact sheet of pictures from the presentation "Ear to the Ground, Eye to the Future"; photos by teachers and administrators involved in University of Southern California summer institutes. Photo and sequencing pictures into story form, series from "A Visual Fable" (AECT), originally created by Eastman Kodak.

Four. Through a viewfinder, from "A Visual Fable" (AECT). Little girl, photo by James E. Parker, North Carolina Central University, from *Audiovisual Instruction*, December 1969. Girl shooting picture, photo by Ronald Linek, University Media Services Center, University of Cincinnati. Insects, by Parkdale (Maryland) high school students for animated film. Boy shooting picture, boy in snow, llama, by Vita and Arthur Pariente. Boy, photo by early elementary school child in Sodus (New York) School System Summer School for Migrant Youth, from *Audiovisual Instruction*, October 1968.

Five. Instructor Gerald Baltimore working with Parkdale (Maryland) high school students, photo from *Audiovisual Instruction*, November 1970. High school students arranging slide sequences, photo from Parkdale (Maryland) High School, courtesy of Gerald Baltimore. Boys looking at pictures, photo by early elementary school child in Sodus (New York) School System Summer School for Migrant Youth. Boy using VTR camera, from *Audiovisual Instruction*, November 1969

Six. Photo from "A Visual Fable" (AECT), originally created by Eastman Kodak. Boy drawing on slate, by Vita Pariente. Boy shooting picture, from "A Visual Fable" (AECT), originally created by Eastman Kodak. Boy taking Lowenfeld test of Visual Haptic Aptitude, photo by early elementary school child in Sodus (New York) School System Summer School for Migrant Youth.

Eight. Group (used as basis for cover design), photo by Daniel J. Ransohoff, University Media Services Center, University of Cincinnati.

Nine. "Yawn," photos from "How Does a Picture Mean?" (AECT), originally created by Eastman Kodak. Collage artwork, by Parkdale (Maryland) high school student for a slide-tape production "PurpleHaze. . .A *Deadly* Experience with L.S.D." courtesy of Gerald Baltimore. Hammering eggs, courtesy of Eastman Kodak. Motion Picture and Education Markets Division. An infant's eye view, from "A Visual Fable" (AECT), originally created by Eastman Kodak.