AN APPLICATION OF GESTALT LEARNING THEORY TO INSTRUCTIONAL TELEVISION

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
JAMES ARNOLD CHERRY
1972

AN APPLICATION OF GESTALT LEARNING THEORY TO INSTRUCTIONAL TELEVISION

By

James Arnold Cherry

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Television and Radio

1972

Accepted by the faculty of the Department of Television and Radio, Michigan State University, in partial fulfillment of the requirements for the Master of Arts degree.

Robert Schreiber

Director of Thesis

ACKNOWLEDGMENTS

I wish to thank: Dr. Robert Schlater, Chairman of the Department of Television and Radio, Michigan State University, for his guidance in the production of this thesis; my wife Kathleen Cherry, for the time she gave up and the help she gave with details; and my supervisors and co-workers at KUSD-TV and the Department of Communication at the University of South Dakota for their understanding and encouragement.

ABSTRACT

AN APPLICATION OF GESTALT LEARNING THEORY
TO INSTRUCTIONAL TELEVISION

By

James Arnold Cherry

Research has not shown Instructional Television to be any more effective than classroom instruction. Television teachers are chosen for their skill. They have greater resources than the classroom teacher. The producers and directors are capable in their roles. The latter however are not trained educators, and neither they, nor the teachers, are making practical use of learning theories.

The objective of this thesis is to provide a plan for the improvement of Instructional Television by applying the principles of Gestalt Learning Theory.

Television is an accepted tool for communicating to the masses. Its use in education provides economies because of its facility for distributing facts and ideas, presented by superior teachers, to a class, a school, a school district, a state, or a nation.

The techniques of television production are broken down into their components and defined as to their use. A sample program is then presented and analyzed using these

terms.

Learning theories are presently divided into two camps. The Stimulus-Response theories developed from the point of view that behavior is the result of a stimulus activating motor responses. The Cognitive theories developed from the Gestalt concept that behavior is a result of central brain processes.

Gestalt Psychology's principles and concepts are broken down and explained. From these, the Gestalt Learning Theory is explained. Gestalt Psychology views learning as a process which follows the principles of perception, principles which are used to explain all that man knows, learns, and all that goes on about him and within him. The primary goal of these principles, as they relate to learning, is understanding, which leads to the generalizability of problem solving.

The principles of television composition and pictorial development relate directly to the Gestalt principles of perception. The relationship of the viewer to the television picture is explained in Gestalt terms and it is shown how, given television's physical limitations, the television program can be developed into a "good" gestalt, and become part of a "good" learning gestalt.

It is concluded that Instructional Television would be more effective with a crew which understands the concept of the program and its purpose. The program should be distributed in such a manner as to allow the classroom teacher to

adapt it to the needs of each individual student.

The emphasis of current ITV upon facts should yield to an emphasis upon productive thinking, and eliciting intrinsic motivation toward student-directed goals. Productional gimmickry must be utilized only as it relates to the over-all impact of the program's purpose.

Present research techniques may not be adequate to test the effectiveness of the learning gestalt because they still are looking at specific responses to specific stimuli. The learning process must be studied on the basis of the individual and his understanding of his world.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

Statement of the Problem

In the forty years since the first experimental educational television broadcast was made in Iowa, and the nearly twenty years since the Federal Communications Commission allocated channels to educational television, ETV has developed into an important aspect of the educational system.[1] This tool for education has been used in a variety of subjects, and has elicited research into its effectiveness. The results have consistently shown that ". . . the average student is likely to learn about as much from a television class as from ordinary classroom methods. . . . Over all the conclusion has been 'no significant differences.'"[2]

The television teacher is usually one selected for his competence. He is provided substantial preparation time. He is assisted by competent aides. He has a fund of

---

[1]Richard B. Hull, "A Note on the History behind ETV," Educational Television: The Next Ten Years, (Stanford: The Institute for Communication Research) 1962, p. 334.

[2]Wilber Schramm, "What We Know about Learning from Instructional Television," ibid., p. 52.

materials with which to work. It would appear that in relation to the classroom lesson the televised lesson would be more effective.[1] Why are televised lessons no more effective than classroom lessons, and what can be done about it?

Objective

The objective of this thesis is to provide a plan for the improvement of instructional television by applying the principles of Gestalt Learning Theory. Currently, instructional television is not known for its practical application of learning theory. The people who produce and direct instructional television programs come mainly from the ranks of commercial broadcasters.[2] They are not trained as educators, although they play an important part in shaping the instructional message.[3] Their competence in using their production tools is not questioned, but their pedagogical background is.

The application of learning theories to instructional television has not been attempted except on a very abstract level.

---

[1]Catharine M. Williams, "Reexamination of 'No Significant Differences' That ITV Studies Report." Audio Visual Communications Review, Winter 1962, No. 4, p. 263.

[2]Gale Adkins, A Study of Critical Requirements for Directors in Educational Television Stations (Lawrence, Kansas: Radio-Television Research, University of Kansas) 1967, p. 90.

[3]Ibid., p. 95.

> It is assumed that . . . television [has] describable potentialities to create effective learning opportunities for students. However, this assumption does not guarantee that the potentialities are fully used--as they should be--in accord with the special conditions for learning and with the best known principles of learning.[1]

Unfortunately, learning theorists have been of little help.

> Papers by psychologists by and large leave the TV practitioner bewildered as to their meaning for him. . . . One looks in vain for much that has recognizable application to practical instructional problems. This condition probably reflects, in part, the basic poverty of present learning theory--it does not have a great deal profound to say with respect to application.[2]

Neither have the television practitioners been outstanding in their enthusiasm for applying learning theory.

> The suggestion was made in the November-December, 1965, NAEB Journal that ITV producers study learning theory. I'm afraid I don't see much merit in teaching learning theory to ITV producers or television to psychologists. It seems to me that each has enough to do by practicing his own trade and keeping abreast of developments in his own field.[3]

Mr. Shumacher does suggest that a learning psychologist be incorporated into the production team, if only to discuss preliminary objectives and a follow-up evaluation.[4]

---

[1]C. R. Carpenter, "Boundaries of Learning Theories and Mediators of Learning," Audio Visual Communications Review, 1962, Vol. X, No. 6, p. 295.

[2]Charles J. McIntyre, "Applying Learning Theory to Televised Instruction," NAEB Journal, XXIV, No. 6, Nov.-Dec. 1965, p. 54.

[3]Hazen J. Shumacher, Jr., "Applying Learning Principles to Televised Instruction," NAEB Journal, XXV, No. 5, 1966, p. 7.

[4]Schumacher, NAEB Journal, XXV, No. 5, p. 7.

In 1965, Charles McIntyre proposed an application of Stimulus-Response (S-R) learning theory to televised instruction.[1] In his article, the one to which Mr. Shumacher refers, he outlined the S-R concepts of drive, cue, response, and reward and related them to the ITV situation. Reaction to his S-R approach has emphasized its mechanistic tendency to ignore the over-all effect upon the learner. "The S-R approach is impoverished with respect to relevant implications which might direct and inform the creative practice of instructional television."[2]

The stress of S-R on drive, cue, etc. or "bits" of information, differs from the Gestalt approach of Abraham Luchins,[3] who stresses that learning should be studied from "above," (the structure and function) rather than from "below," (analyzing the bits). It is the premise here that this approach is more productive, and can serve as a point of departure to develop a plan for the improvement of televised instruction.

---

[1]McIntyre, NAEB Journal, XXIV, No. 6, p. 54.

[2]Hugh Greene, "Some Second Thoughts on S-R Theory and ITV," Educational Broadcasting Review, III, No. 1, Feb. 1969, p. 7.

[3]Abraham S. Luchins, "Implications of Gestalt Psychology for AV Learning," AV Comm. Review, Sup. IX, 1961, p. 7.

Terminology

Instructional Television--ITV--is used here to refer to televised programs designed to be used as direct instruction or enrichment in a formal learning situation.

Learning theory--a psychological construct relating known facts and principles about learning to one another.[1]

Gestalt--as used in this thesis.

1. A quality of shape, form, or regularity to be treated as a noun and preceded in the text by the article (a).
2. A process--temporal and/or spatial, to be treated as a noun and preceded by the article (the).
3. The concept of Gestalt as used in Gestalt Psychology or Learning Theory (to be capitalized in the text).
4. It also has the meaning of "A concrete entity per se, which has, or may have, a shape as one of its characteristics."[2]

(The terminology used in ITV and Gestalt Learning Theory is presented in their respective chapters.)

---

[1]Laurence Siegal, Instruction: Some Contemporary Viewpoints (San Francisco: Chandler Publishing Company, 1967), p. 32.

[2]Wolfgang Kohler, Gestalt Psychology (New York: Liveright: paper bound edition 1970), pp. 177-178.

CHAPTER II

INSTRUCTIONAL TELEVISION PRODUCTION

Television: A Medium of Communication

Television is a medium of communication which transmits pictures and sound from one place to the next. "From physics we can learn what makes it possible to present a visual image. We can learn how an electron beam, directed toward the surface of a screen on which a luminescent substance has been spread, is made to scan the screen long enough to produce the illusion of a photographic reproduction."[1] Television qua television is nothing more than electronics serving as "an extension of two of our senses--sight and sound."[2] "The mere imposition of a camera (or microphone) adds no magic quality to the material it surveys."[3] Television signals can be distributed to reach many people or many countries, and thus may be used as a mass medium for public information and entertainment. "We must

---

[1]Caleb Gattegno, Towards a Visual Culture (New York: Outerbridge & Dienstfrey: 1969), p. 9.

[2]Hoyland Bettinger, Television Techniques (New York: Harper & Brothers: 1947), p. 11.

[3]Roderick MacLean, Television in Education (London: Methuen Educational Ltd.: 1968), p. 6.

not imagine that the use of a potentially vast distribution system automatically confers the virtues or implies the vices of mass medium techniques."[1] "Television is a means of communication. It has neither integrity, brains, nor feeling. It is as inclined to transmit lies as it is the truth, trivia as it is wisdom."[2]

Television may be, in itself, neutral (the receiving set, sitting there, with a blank screen). When it is turned on, however, it begins to reveal images and emit sounds that are selective and lack the fidelity of the human senses. The eyes can scan the environment. The TV camera can only select a portion at a time. The ear can take in the sounds around it or discriminate one at a time. The TV microphone is usually directional, and in any case, is indiscriminate. "Even when telecasting is live from nature, the way the cameraman uses his tool brings back the artist and his interference upon the subject being presented."[3] Television's neutrality, then, is erased when it begins to function and is put to a purpose. Used as a tool, "to convey to the audience the right sights and the right sounds at the right time in order to affect its members,"[4] it can educate,

---

[1] Ibid.

[2] Lawrence F. Costello and George N. Gordon, Teach with Television (New York: Hastings House: 1961), p. 24.

[3] Gattegno, p. 12.

[4] Colby Lewis, The TV Director/Interpreter (New York: Hastings House Publishers: 1968), p. 7.

inform, entertain, or terrorize. It all depends upon who decides what is "right."

Television: A Medium of Instruction

"The real purpose of television is not to please the eye of the camera and to create eloquent programs for their own sake, but to communicate important ideas and values from one human being to another."[1]

Television's usefulness to education begins with its facility of distribution. The use of the basic components of a television system (camera, microphone, transmitter, and TV receiver), can enable educators to distribute images and sounds from one classroom to the next, one school to another, or cover whole school districts and groups of districts. Distribution can be by cable, regular broadcast frequencies (VHF, UHF), or special educational closed-circuit broadcast frequencies (ITFS).

Closed-circuit cable can be limited to that length of cable which connects a single camera with a single receiver. This can serve to simply magnify a microscope view, a science demonstration, or any small object or process, so that it can be seen more clearly by more students.[2] A cable system can be expanded to distribute films, record and play back

---

[1]Herbert Zettl, Television Production Handbook (San Francisco: Wadsworth Publishing Company, Inc.: 1961, p. iii.

[2]Philip Lewis, Educational Television Guidebook (New York: McGraw-Hill Book Company, Inc.: 1961), pp. 9-10.

videotape and present complete programs on specific subjects.[1]

Closed-circuit educational broadcast frequencies and open-circuit broadcast frequencies are used primarily for "produced" programs, in the tradition of commercial television. Subject matter and style of presentation can vary according to the needs of each situation. Most ITV broadcasts have been the lecture-demonstration type of program, in which a single person, with varying amounts of visual aids, presents facts about a single topic.[2] In this way, television has been used to teach an entire course, with or without pupil supervision (total teaching), as an integral part of the course (team teaching), or as a supplement to regular instruction (enrichment).[3] Other types of programs, such as interviews, panel discussions, and dramatizations can be integrated into team or total teaching, or, they, as well as films and other outside materials, can be used as enrichment, "providing an imaginative experience which may serve as a useful starting point for further activity."[4]

---

[1] Ibid., pp. 57-58.

[2] Opportunities for Learning: Guidelines for Television, ed. Alexander Frazier (Wash. D. C.: National Education Association: 1960), pp. 10-12.

[3] George N. Gordon, Educational Television (New York: The Center for Applied Research in Education, Inc.: 1965), p. 66.

[4] MacLean, p. 61.

Production Techniques of ITV

Production styles and techniques of commercial television have been carried over to ITV, some by necessity, some by choice. The equipment remains the same, so basic operations remain the same. Terminology for use of the equipment, i. e. camera control, pictorial composition, and pictorial continuity, remain the same. The techniques to which the terms apply are important because of their psychological effects on an audience. Analysis of the effects in Chapter IV utilizes some of the following definitions.

Camera control

Field of view- "The area or amount of the scene which is shown on the screen."[1]

Camera angle- "The direction from which the camera, and therefore the viewer, sees the subject."[2]

Camera movement-

"Pan: Turning the camera horizontally, from left to right or from right to left.

Tilt: Tilting the camera up and down. Sometimes also called pan up and pan down.

Pedestal: Elevation or lowering the camera on a studio pedestal.

Tongue: Moving the whole camera from left to right and from right to left on a boom dolly.

Boom: Moving the whole camera up and down on a camera boom.

---

[1]Edward Stasheff and Rudy Bretz, The Television Program: Its Direction and Production (New York: Hill and Wang: 4th ed., 1968), p. 249.

[2]Ibid.

Zoom: Changing the focal length of the lens through the use of a zoom rod while the camera remains stationary.

Dolly: Moving the camera toward or away from an object by means of a mobile camera mount.

Truck: Laterally moving the camera by means of a mobile camera mount.

Arc: Moving the camera in a slightly curved dolly or truck movement with a mobile camera mount."[1]

Picture Composition

Unity- tell one story at a time.

Variety- informal balance.

Harmony- related things go together.

Balance- control of relative attraction power of picture elements.

Rhythm- line, pattern, and movement.

Pace- design picture for desired amount of eye travel.

Proportion- relative size and placement of objects as in nature.

Emphasis- most important object stands out.

Dominance- strong point of interest.

Depth- placement of subjects for dimensional illusion.[2]

Pictorial Continuity

Cut- instantaneous change in scene.

Dissolve- a method of transition in which one camera picture becomes stronger as another becomes weaker.

---

[1]Zettl, pp. 44-45.

[2]Bettinger, pp. 36-44.

Fade- same as dissolve but from one picture to a blank screen or the reverse.[1]

Wipe- "Transition in which the new picture starts as a small area and grows until it covers the entire screen."[2]

Unity- include nothing that does not contribute to the over-all effect.

Variety- vary mood, pace, and proportion within unity.

Harmony- unity and variety among related things.

Balance- the "weight" or pulling power in one shot blends with that of another.

Rhythm- time between transitions varies according to the need and mood of program content.

Pace- time between transitions in sequences may vary within over-all rhythm.

Proportion- can vary to show changes in relational context in sequences or over-all.

Emphasis- varies according to context, can be developed through all of the above.

Dominance- theme, mood, or point of attraction that carries over shot-to-shot.[3]

Audio

Perspective- source of sound relates to subject's distance from camera.[4]

Clarity- sound distinct and not muffled.[5]

Loudness- consistently understandable but not overpowering.[6]

Quality- fidelity, wide range of frequencies and lack of interference.[7]

---

[1]Rudy Bretz, Techniques of Television Production (New York: McGraw-Hill Book Company Inc.: 1962), pp. 95-110.

[2]Ibid., p. 111. [3]Ibid., pp. 36-44. [4]Ibid., p. 75.

[5]C. Lewis, p. 185. [6]Ibid., p. 185. [7]Ibid., p. 192.

Dynamics- vary all factors in accordance with pictorial needs or special effects.[1]

Lights

Quality- soft or hard concentration of light rays.

Intensity- low or high over-all light level.

Direction-

Key- main light source in front of subject.

Back- light(s) in back of subject, opposite camera, to separate subject from background.

Fill- lower intensity light used to diffuse shadows.

Background- special illumination on set.[2]

Set

Neutrality- non-representational background.

Realistic-

Replica- faithful copy of an original.

Representational- copy style of original.

Symbolic- a few objects suggest setting.

Fantasy-

Abstract- express mood, no existential relationships.

Silhouette- "a concentration on subject outline."

Bizarre- "deliberately distorted reality."[3]

In a typical ITV program, some or many but probably not all of the preceding will be consciously applied. Film

---

[1]Ibid., p. 197. [2]Bretz, pp. 336-341.

[3]Gerald Millerson, The Technique of Television Production (New York: Hastings House: 3rd ed. 1964), p. 135.

or still photographers can spend minutes or hours composing a shot, "but the television cameraman must compose instantly and instinctively."[1] "The principles, even the simpler ones which apply to television, are still too involved to be applied consciously in the heat of television rehearsal or in the greater heat of 'off-the-cuff' production."[2] The ITV program of more than one static shot would, of course, use camera control techniques, but not necessarily use the full range of pictorial composition and continuity. Skill in audio can be no more than in controlling clarity, loudness and quality. Light is normally set to meet the technical requirements and little else. With a typical low budget, economy and urgency take precedence over art and technique.

Production Techniques in a Program Context

The instructional crafts series, Just Imagine, produced at KUSD-TV, Vermillion, South Dakota,[3] can stand as an example of those programs which are being seen in classrooms across the country. The series is part of an art and crafts curriculum for South Dakota and Minnesota. The art section has been well received for two years; the crafts was first shown in fall of 1971. Both sections are sixteen programs

---

[1]Jones, p. 79.

[2]Stasheff and Bretz, p. 99.

[3]Produced and taught by Diana Tollefson, Rapid City Art Supervisor, Rapid City, South Dakota: Directed by James Cherry, Producer-Director, KUSD-TV, University of South Dakota.

for each of eight grades. A single program from Just Imagine might go like this:

JUST IMAGINE

VIDEO	AUDIO
Slide 1: logo	Music: Dave Brubeck's Unsquare Dance, up 15 sec. and to B.G.
Slide 2: Just Imagine	Anncr: It's time for Just Imagine, your TV lesson in crafts.
	Music: up 5 sec. and to b.g.
Slide 3: Diana Tollefson	Anncr: and now, here with today's lesson, is Diana Tollefson
Dissolve to C 1 on Aladdin's lamp Dissolve to C 3 on set. wide shot, zoom in to MCU of Diana	Music: fade out Diana begins lesson.
C 3 zoom out and pan right to include rabbit hole facade	Diana turns to her left to rabbit hole and pulls out toy animal.
Cut to C 4 with two shot, Diana and animal	Diana talks to animal about lesson, and up-coming slide.
Dissolve to Slide 4: art work	Diana talks about picture on slide.
Dissolve to C 3 MCU on Diana	Diana talks about today's project.
Cut to C 4 on samples	Diana holds up samples of project and talks about them.
Cut to C 3 MCU Diana	She shows materials to be used.
Cut to C 1 CU of project	She begins work.
Cut between C 1, C 2, C 3 as needed during lesson	She continues work.

VIDEO	AUDIO
Cut to C 2 CU on object	She shows completed work to C 2.
Cut to C 3 MCU Diana	She says good-by.
C 3 zoom out to wide shot	Music: up 15 sec.
Dissolve to C 1 on Aladdin's lamp. Dissolve to Slide 5 logo	Music: to B.G.
Slide 6: Just Imagine	Anncr: This has been Just Imagine . . . etc.
Slide 7: Diana Tollefson	With Diana Tollefson . . . etc.
Slide 8: directed by	Produced in the studios of . . . etc.
Slide 9: under authority of-	Under a grant from . . . etc.
Slide 19: logo	Music up to fill
Fade to black	Fade music out

The field of view of the cameras varied from wide to close-up. The zoom lens on camera three went from wide angle to medium close-up on the teacher at the beginning of the program, and did the reverse at the end. Camera four was generally on a close-up of some object which she was holding, except for a two shot when she talked to the animal. Camera one was used for a close-up of the work in progress.

The camera angle of camera three was about head on to the teacher. Camera four was about 45 degrees to the right of camera three. Camera one was on a six foot scaffold behind the set, looking over her left shoulder.

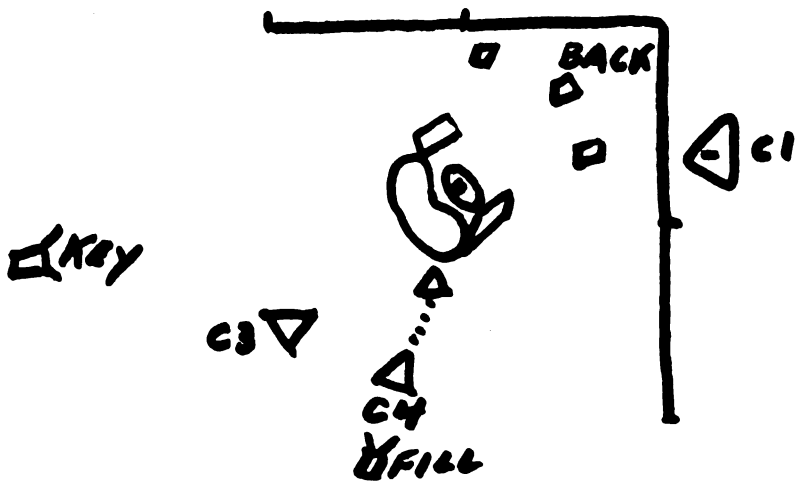

Figure No. 1.

The camera movement was limited to pans and zooms, with some repositioning of camera four between shots.

Pictorial composition was left to the good judgment of the cameraman, with occasional reframing suggestions from the director. The teacher, looking at a monitor, would "talk" a close-up camera through a piece of art work.

Pictorial continuity was mostly a string of cuts, motivated by a shift in the work process or by the teacher's comments about what she was doing and what she wanted the students to see. Dissolves were used from last opening the slide, to an Aladdin's lamp, and to a shot of the set. The reverse was done at the end of the program. This use of the dissolve was intended to achieve a feeling that the teacher on Just Imagine was appearing and disappearing through the influence of the lamp.

Opening and closing audio was pre-recorded on tape. One microphone, an RCA BK6B, was used on the teacher. There was no need for special effects.

Lighting was set carefully for adequate level and maximum detail and contrast. The key was set about 15 degrees left of camera three, and the fill, above camera four. Three backlights were hung about 25 degrees apart, behind the teacher. All lights were about 45 degrees vertically (see Figure 1, p. 17).

The set was representational of a study. Four 4 x 8 flats were connected at a right angle (see Fig. 1, p. 17). The two center flats were false bookcases with wall paper on the upper half. The two outside flats were wood panels. The teacher sat at a kidney-shaped work table, with a small shelf unit to her right and a trapezoidal display table for the rabbit hole facade to her left.

CHAPTER III

LEARNING THEORY

Learning theories are divided into two major camps: Stimulus-Response theories and Cognitive theories. Both are sub-divided, other theories overlap the two to some degree, and others fit into neither category.[1] All major theories agree upon the findings of research, but they disagree in their interpretation and explanation of the research results.

The S-R theories see behavior solely as the result of a stimulus activating motor reflexes, while Cognitive theories see behavior as a result of central brain processes. This is a conflict between behavior-in-physiological-structure-terms or behavior-in-ideational-structure-terms. In problem solving, S-R looks to past history (the build-up of neural structures), Cognitive looks to the contemporary structure of the problem. S-R sees learning as habit (strengthening neural connections), and Cognitive sees it as the development of Cognitive structure.[2]

---

[1] Ernest R. Hilgard, Theories of Learning (New York: Appleton-Century-Crofts: 2nd ed.: 1956), p. 8.

[2] Ibid., pp. 9-10.

The S-R theory of Edward Lee Thorndike was developed from the earlier British associationists. The theory changed to accommodate new ideas, and grew in explanatory ability.[1]

The Cognitive theories are derived from the Gestalt school, which developed in the era of Thorndike's prominence and which leveled a vicious attack on his theory and on the Associationists.[2] Gestalt influenced Cognitive theories in areas of differing emphasis.[3]

The main divisions of Gestalt theory are:

1. The classical Gestalt theory, developed by Max Wertheimer, Wolfgang Kohler, and Kurt Koffka.[4]
2. The Sign-Gestalt theory of Edward C. Tolman, who was heavily influenced by Gestalt.[5]
3. The Organismic Psychology of Raymond H. Wheeler, which was derived from Gestalt theory.[6]
4. The Field theory of Kurt Lewin, which was also developed from Gestalt theory.[7]

---

[1]William S. Sshakian, Psychology of Learning: Systems, Models, and Theories (Chicago: Markham Publishing Company: 1970), p. 20.

[2]Robert D. Strom, Psychology for the Classroom (New Jersey: Prentice-Hall, Inc.: 1969), p. 189.

[3]D. W. Hamlyn, The Psychology of Perception (London: Routledge and Kegan Paul: 2nd imp. 1961), p. 112.

[4]Hilgard, p. 222. [5]Ibid., p. 185.

[6]Ibid., p. 225. [7]Ibid.

Gestalt Psychology

Wertheimer, the founder, and the other Gestalt psychologists do not agree on one concrete definition for the word Gestalt, but there is general consensus that Gestalt refers to a whole whose organization is dependent upon its parts and is more than its parts, and that the organization is a function of the Law of Pragnanz.[1]

Pragnanz is defined as the psychological organization which will always be as good as the prevailing conditions allow (compact but significant),[2] or, the organization of the field tends to be as simple and clear as the given conditions allow.[3] Pragnanz is an analogy of the concept of minimum-maximum in physics. Either as much (significant), or as little (compact), will happen as the prevailing conditions will permit.[4] Think of a soap bubble, floating free in the air. The forces within it and without it cause it to take on the shape and size it has. That shape and size is an example of a "good" gestalt.

Some principles of Gestalt show the make-up of the gestalt process.

---

[1]David Katz, Gestalt Psychology: Its Nature and Significance (New York: The Ronald Press Company: 1950), pp. 91-92.

[2]Kurt Koffka, Principles of Gestalt Psychology (New York: Harcourt Brace and Company: 1935), p. 110.

[3]Max Wertheimer, Productive Thinking (New York: Harper and Row: 1945), ed. note.

[4]Koffka, p. 108.

Proximity-"In a total stimulus situation, those elements which are closest together tend to form groups."[1]

Similarity-"When more than one kind of element is present, those which are similar tend to form groups."[2]

Closure-"Lines which enclose a surface tend to be seen as a unit."[3] Closed areas are more stable than unclosed ones and therefore more readily form figures in perception.[4]

Good contour, Good continuation, Common destiny-"Parts of a figure which have a 'good' contour, or common destiny, tend to form units."[5] Straight lines tend to continue as straight lines, and curves, as circles.[6]

Common movement- Elements are grouped when they move simultaneously and in a similar direction.[7]

Experience-"Experience amounts to 'consolidation of a natural response of the . . . system.'"[8] "Comprehension of symbolic forms is partly dependent on the circumstances under which they were learned."[9]

Learning-"The modification of an accomplishment in a certain direction" which "consists in creating trace systems of a particular kind, consolidating them, and in making them more and more available both in repeated and in new

---

[1]Katz, p. 25. [2]Ibid. [3]Ibid.

[4]Hilgard, p. 228. [5]Ibid., p. 26.

[6]Hilgard, p. 229. [7]Katz, p. 27.

[8]Ibid., p. 29. [9]Katz, p. 28.

situations."[1]

Trace-"The concept of memory traces is an attempt at explaining the influence of the past by the condition of the present. An event in time influences another event which succeeds it after a finite interval, not directly, but only through some effect which it has left behind and which, for brevity's sake, we will call a trace, without implying by that term anything about the special nature of this after-effect."[2] "Traces are the exact equivalents of previous impressions in the central nervous system,"[3] which must change under the law of Pragnanz.[4]

> At a definite moment in the life history of the organism a certain process must arise for the first time and leave a corresponding trace which remains as a condition for an unlimited number of later processes. Potentially every new process may affect later processes through its trace, so that each process alters the organism.[5]

The articulate organization of traces has two aspects. "An individual trace may be more or less articulate." "The trace may be more or less articulate and [a] significant part in one or several larger systems."[6] Aggregation between traces of nearly identical experiences will have a conservative effect upon the traces. A trace within its stratum is connected with the Ego of the same stratum, but may be far removed from the Ego of a later stratum. The stronger the

---

[1]Koffka, p. 544. [2]Koffka, p. 429.

[3]Katz, p. 97. [4]Hilgard, p. 230.

[5]Koffka, p. 548. [6]Ibid., p. 544.

aggregation, the more Ego strata are brought into relation with the trace system.[1] "A trace strongly organized within a larger trace system will, on many occasions, be less available, though it has a higher survival value than a trace that has preserved a greater degree of independence."[2] This may seem a lengthy explanation of a simple term, but Koffka devotes one hundred pages to it, and this is an incomplete summary sufficient to the purposes here.

Ego- "The Ego [is] a sub-system in a larger field, its states are field events even when this field is not the behavioral field, when it is not conscious."[3] The Ego affects perception, learning etc., even when no conscious effort is made to include it in the process. "The Ego has a core, the self, and enveloping this core, in various communications with it and each other are sub-systems comparable to different layers."[4]

Gestalt Psychology is based on the process of perception, more specifically, visual perception. The concept of Gestalt, however, must, by definition, be all inclusive (man, society, the world, the universe). A part of each must be considered in its relation to the whole of each, and each must be considered in relation to the whole. The implications to learning are that no perception by man should be considered in isolation from the ongoing process that is man, and his perceptual field. He perceives an act or an object

---

[1] Ibid., p. 525. [2] Ibid., p. 527. [3] Ibid., p. 330.
[4] Ibid., p. 171.

or a concept in relation to himself and his environment. This perception follows the law of Pragnanz, the process of ordering.

In the human organism, a continuing process occurs which orders the first impressions it receives so as to differentiate between figure and ground, to perceive shape and size, to distinguish shade and color, etc., to organize an Ego, and to establish a personal order of trace systems and understandings of himself, his world, and his relation to his world.[1] The organism increases its sophistication as the ordered field of trace systems, in a continual process of interaction, develops new orders and priorities. Some orders, perceived to be of low priority, may weaken, or may become less available to affect later processes. Some may be weak and fleeting. Some form with present orders or serve as an influence upon later traces or trace systems. All interact to some degree.

Gestalt Learning Theory

"Gestalt Psychologists do not have a common theory of learning; they differ somewhat on what takes place during learning."[2] They do agree, generally, in the foregoing description of Gestalt Psychology, and learning principles can be drawn from that.

---

[1] Ibid., p. 171.

[2] Abraham S. Luchins, Review, Vol. IX, 1961, p. 7.

Traditional concepts of learning, associationism and behaviorism, are not held to be invalid or useless, but are not considered to be sufficiently inclusive. They are but aspects of the learning process. Gestaltist ideas of learning are derived from their concept of man as primarily Homo Sapiens ("a creature trying to realize the meaning and structure of the world around him"[1]), as opposed to primarily Homo Volens (a creature driven by inner urges which cause him to perceive and act only to satisfy the metabolism), or Homo Mechanicus (a black box that reacts without mediation from inside and is buffeted about by the environment). Man is not pure Homo Sapiens. He behaves at times as Volens or Mechanicus. All men have the capability to be the former, but may, at times, behave more like any one or the other. Education should attempt to develop the Sapiens aspect over the others. What is important is the total structure and process of learning and not the organismic or environmental determinates alone.[2]

The study of man and how he learns becomes more difficult because one must stop considering just <u>what</u> the student learns and start considering the <u>process</u> of learning: start considering the processes and structures of learning situations and devices to promote learning, start considering the interaction of the individual with his field (both internal

---

[1] <u>Ibid</u>., pp. 8-9.

[2] <u>Ibid</u>.

and external) in any given situation. In that given situation the basic presentation of new material must be structured to let the learner grasp the significance of the material.

The fact of the existence of the material may not have significance to the learner unless it is perceived to be relevant. The priority of a mail box is not high until you need to mail a letter. Part of learning is the process of perceiving the relevance of the material. Algebra may be memorized, but it will not be used correctly unless it is placed in a relevant structure and understood.

Understanding is gained through insight, "appropriate or meaningful behavior and experience is the presence of any life-situation. The suddenness of perceptual or imaginal reconstruction of the field is the most characteristic, but not necessarily essential, feature of the process."[1] Kohler's experiments with apes led him to this concept. The apes' apparent trial and error, or random behavior, before grasping the solutions to their problems was explained not as trial and error, but as "good" errors: errors which showed a progressive tendency to solution, as opposed to "bad" errors, those which show no understanding of the situation.[2] Bad errors are caused by a lack of maturation, a lack of

---

[1]George W. Hartmann, Gestalt Psychology: A Survey of Facts and Principles (New York: The Ronald Press Company: 1935), pp. 311-312.

[2]Ibid., p. 160.

previous traces and structures with which to orient the present situation.[1]

The learning process may be interfered with if the situation creates too much tension. Material beyond the maturation level of the individual will cause anxiety and frustration. Material which creates mild tensions will be conducive to learning and serve as motivation: the motivation being to overcome the tension through Pragnanz.[2]

The question of practice or repetition is not disregarded by Gestalt psychology. It is not considered to be learning in the Gestaltist's sense of the word, and if it is used as such it can be bad. Repetition can be useful if successive errors lead to improvement, or a skill is sharpened. The pattern must be watched. Non-varying repetition can cause a narrowing of the field and a loss of the sense of structure, thus it can destroy curiosity and creativity. A pattern of improvement shows understanding of the structure and can be beneficial.[3] Blind practice can lead to inappropriate actions under conditions similar to those of the practiced situation, i.e. not be generalizable. This can be avoided by presenting material in a meaningful context before practice starts.[4]

According to Luchins, a goal of education is to gain new knowledge and this is best accomplished through

---

[1] Ibid., p. 191. [2] Luchins, AV Com. Review IX, p. 22.
[3] Ibid., p. 23. [4] Ibid., pp. 24-25.

reasoning or problem-solving. This is the whole intent of Gestalt Learning Theory. The student must not be restricted to regimented, by rote, un-reasoned learning. "The intent is to help the pupils realize that there is no neat one-to-one correspondence between problems and solutions." Different problems may have the same solution. A problem may have several solutions, or no solution. The pupil must learn the relationships and understand the process.[1]

---

[1] Ibid., p. 27.

CHAPTER IV

GESTALT LEARNING THEORY AND ITV

ITV as a Gestalt

The instructional television program is a process, and at the same time, part of a larger process, learning. Shot-by-shot, sequence-to-sequence, the people running the equipment, teaching the lesson, and directing the program, all interact with one another, the equipment, and the material being presented to create a meaningful whole, a good gestalt. All of this, in turn, interacts with the student to help him form new cognitive structures, a gestalt of his own.

This chapter has been divided into sections which correspond to the S-R breakdown of the learning process, because of the need to express this gestalt in familiar terms. This division is difficult, because a gestalt loses something when its parts are studied in isolation. Gestalt speaks of perception and interference, motivation and goals, response, practice and feedback, and reasoning, in terms of their interrelatedness. Although this chapter deals with them separately, there cannot help but be common references made and some repetition of points.

Perception and Interference

The perceptual field for the television viewer is the screen, as the frustum of a rectangular pyramid. Within this field many elements can be presented. The viewer will operate under the law of Pragnanz to order those elements using the principles of similarity, proximity, closure, common movement, and continuation. Anything which does not contribute to the fulfillment of the need for Pragnanz can be considered as interference.

The process of perception is interfered with by the limitations imposed by the pyramidical field of view. The size and lack of definition of the television screen also deters the process. To overcome these facts the television team works to select the proper field of view for the message and the proper sequence of views. These are presented under the necessary, and creative, elements of lighting, audio, set, pictorial composition and continuity.[1] They create the meaningful whole with the elements they have. The combination of these elements is aided by language of techniques which has become accepted by the viewers. Even the child, by the time he has reached school, has been exposed to this language enough to understand it and accept educational materials in this context.

---

[1]Gerald Millerson, pp. 205-206.

The psychological effect of the techniques on the viewers can be inferred by common sense, but Gestalt Psychology, as a theory of perception, can serve as an explanation of how they work. The basis of Gestalt Psychology is visual perception specifically, and sensation in general, so it is not surprising that television, as a highly visual medium, and Gestalt principles can come to the same conclusions. For example, TV traditionally uses an establishing shot to show the relationships among elements in the set. Gestalt theory calls for this on the grounds that the parts cannot be understood without an understanding of the whole. Television practitioners know that the parts can be shown separately, but not for long, or the tension toward "closure" will interfere with the message. This is not to say that to reveal the whole bit-by-bit, to play on this tension does not have its place, if it is done right. If the progress toward the whole is logical and the viewer can relate the parts to one another, it will be effective.[1]

As the viewer structures the wide field, the gestalt begins, and particular objects become differentiated. At this point a narrowing of the visual field concentrates the attention on the differentiated objects. The TV production takes advantage of the process by narrowing the field to these objects, and selecting those to which attention is to be directed. The selection of a medium or a close shot then

---

[1] Ibid., pp. 223-224.

aids in the process.

In a two dimensional medium, special care is taken to present material in its proper physical perspective, so as to give it the appearance of solidity and depth. Without the advantage of visual parallax, a box seen from straight on is seen as a square, but a box seen from the proper angle is a cube. In any given situation, there is a best angle which will give the correct proportions. The selection of the angle can affect the viewer's perception of the subject.[1]

Camera movement is another area that follows the Gestalt principles, in this case, good continuance. Unless a movement is used to survey the scene, to show relationships,[2] it should be motivated by some action or audible signal which de-structures the field and calls for re-structuring. A movement of the teacher's head to look off screen, or a noise off camera, in accordance with the principle of good continuance, creates a tension to follow the line of view or direction of sound to its conclusion and re-structure the field. The camera does this for the viewer through a pan or tilt. These movements can also have further uses, as they take meaning from the context in which they are used. Those meanings are dependent upon the developments before and after them to give the impression, for example, of speed, power, elation or depression.

---

[1]Colby Lewis, p. 67. [2]Ibid., p. 106-107.

To restructure the field by movements such as dolly or truck, may cause the viewer to lose contact with the elements unless they are motivated by a lack of present structure. The movement of the whole scene across the screen will separate the viewer from the action, because, following the principle of common movement, the viewer will restructure the field as a whole rather than concentrate on wholes within the field.

The conventions of the TV language, known as pictorial composition, are more than mutually agreed upon as visual terminology. They are practical aspects of the development of meaningful wholes. They structure the visual field so as to overcome the Pragnanz-tension of the viewer. The tension is mitigated if Pragnanz is assisted by good pictorial composition. Any negative of the principles of composition can have its own appeal if it is used to create tension for a particular purpose. The principles closely follow the law of Pragnanz. "The psychological organization will always be as 'good' as the prevailing conditions allow." "Good," in this context, as defined by Kohler, is explained in almost the same terms as "good" picture composition. Katz, in quoting Kohler, refers to the characteristics of "regularity, symmetry, inclusiveness, unity, harmony, maximal simplicity and conciseness."[1] The difference between these and the principles of continuity is one of emphasis. They can

---

[1]Katz, p. 40.

be paralleled to some degree:

Gestalt	TV
unity	unity
harmony	harmony
regularity	rhythm and pace
symmetry	balance, proportion, variety

The ideal of both remains the same, the structuring of the field into a meaningful whole.

In the continuity of pictorial development, the transitions from one whole to another structure a new whole. Transitional techniques are different means of creating the new wholes. The instantaneous change of a cut can de-structure the continuity or strengthen it. If the viewer perceives a break-down in the old structure, either through audio or video, he is prepared to accept a new structure. The shock effect of a cut comes when he is not prepared. The cut motivated by action or sound is a release of tension. Not motivated, it creates tension.

The blending of fields by the dissolve mediates the tension to re-structure, by gradually imposing the new field. If the fields are drastically discontinuous, the dissolve tends to force a relationship upon them. Depending on the productional context of the dissolve, this relationship may be perceived as temporal or spatial. If the dissolve is unmotivated, the confusion of fields can result in high tension.

The interrupted wipe, or split screen, effectively aids the formation of the gestalt if the two sides of the split are interrelated. Imbalance can be used for its own effect. The complete wipe divides the attention by restructuring the field gradually and results in less tension to re-structure than the dissolve, because it does not present two complete fields simultaneously.

The principles of pictorial continuity relate to Pragnanz in the same ways that composition does. Variety, balance, harmony, etc. are all necessary components in the make-up of the whole. They are probably more important to the whole in this context than in composition alone. The viewer can structure the whole with the exclusion of some of the parts, if the exclusion is not too extensive.

Motivation and Goals

Gestalt Psychology defines motivation in the usual terms of needs, such as Ego needs (Homo Volens), or tissue needs (Homo Mechanicus). Instead of working with either one it works with both in a larger context of goals, motives, and responses. To study or, in this case, guide behavior, we must "first try to grasp the structural features of an act."[1] Motivation may be either intrinsic, or extrinsic. Intrinsic motivation is that which comes from the individual's perception of the "Significance to himself of the

---

[1]Luchins, AV Communications Review, p. 12.

motivating experience."[1] Extrinsic motivation is that which "is divorced from the actual subject matter of an assignment."[2]

"Behavior is determined by inner tensions based on needs. A need establishes the value of an object for a particular kind of behavior."[3] Thus "conscious learning is guided by the purpose or intention of the learner."[4] The above describes the process of intrinsic motivation. Gestalt Psychology does not dismiss extrinsic motivation, because it serves to attract the attention to conditions which will serve to arouse intrinsic motivation. Motivation has to be self-realizing. It manifests itself in curiosity and problem solving. In one sense "virtue" is its own reward, the virtues being "the names for realized potentials."[5]

Television in instruction serves most often as extrinsic motivation.[6] Television, however, has been shown to be most effective when the student has chosen TV as a means to reach his goals.[7] This is intrinsic motivation.

---

[1]C. W. Bending, Communication and the Schools (Oxford: Pergamon Press: 1970), p. 214.

[2]Ibid. [3]Katz, Gestalt Psychology, p. 142.

[4]Hartmann, Gestalt Psychology, p. 270.

[5]Joseph J. Schwab, "Teaching and Learning as Inquiry and the Contributions of Television," Inquiry, ed. Wilma McBride (Washington, D. C.: National Education Association: 1966), p. 16.

[6]Luchins, Gestalt and AV Learning, p. 14.

[7]Schramm, The Impact of Educational Television (Urbana: National Educational Television and Radio Center: 1960, p. 184.

In other cases, the goals of the student may not be the goals of the teacher. ITV helps these goals coincide by arousing interest in a subject to foster intrinsic motivation, and thus, further activity. Enrichment programs serve in this capacity. Most ITV assumes the goals of student and teacher to be congruent, and ignores intrinsic motivation, by presenting mostly facts and answers to problems. "The concept of teaching apparent in the programs seemed to be that the learner's chief need was for as much information as could be crammed into the time allotted for viewing."[1] ITV has become more sophisticated in the years since that was written, but the idea expressed is still apparent in current criticism.[2] Still, programs seem to place less than optimum emphasis on the raising of questions and the stimulation of further study.

Response, Practice, and Feedback

Gestalt Psychology makes little specific reference to response, because of the consistent viewpoint of the whole. It does express strong opinion on practice and feedback, because of their importance in the S-R model of learning. Gestaltists do not see "response" as descriptive of behavior. "Behavior is not haphazard, but purposive, goal-directed,

---

[1] Opportunities for Learning, ed. Alexander Frasier and Harold E. Wigren (Washington, D. C.: National Education Association: 1960), p. 11.

[2] Bending, Communication and the Schools, p. 235.

i.e. orderly and meaningful."[1] Response implies behavior which is not ordered, but reactionary, like a knee-jerk. "Gestalt writers likewise insist that mental processes do not merely bridge a gap between stimulus and response; they are part of an all-inclusive dynamic field and have no meaning except in terms of that field."[2] In discussing response we generally refer to the overt reaction to a stimulus. This overt behavior does not necessarily reflect the understanding, and organization that has taken place covertly. Overt correctness may not indicate covert errors, and vice versa.[3]

Gestaltists have a very low opinion of practice or repetition. "Learning is a creative process, depending upon creation and discovery. The establishment of conditions favorable to insight is the progressive substitute for repetitive drill."[4]

> Insight, then, takes the place of practice or repetition as the key word in a configurationist picture of learning. . . . The chief function of repetition, according to Koffka, is to prepare the ground for the construction of an appropriate figure. . . . After the configuration has once been constructed, repetition serves to make the behavior appreciably firmer and easier--but not before.[5]

---

[1]Koffka, Principles of Gestalt Psychology, p. 311.

[2]Hartmann, Gestalt Psychology, p. 270.

[3]Luchins, Gestalt and AV Learning, p. 17.

[4]Hartmann, Gestalt Psychology, p. 270.

[5]Ibid., p. 171.

Regarding feedback, Koffka says simply, in agreement with the S-R theorists, that in some cases

> ". . . the success of the action performed is responsible for its being learned. . . . Success transforms a process in such a way as to give it new meaning, i.e., a new role in its total goal-directed activity. In my theory success need not be the only effect to change the trace of a unitary process. Failure may be another, punishment a third and there is still room for many other varieties of results of actions.[1]

In the interaction of learning, feedback is essential, whether it be positive or negative.

The teacher also needs feedback from the students to gauge the impact of the lesson. Gestalt Learning Theory does not handle this directly; it is implied in the inferences which may be drawn on evaluation of learning, which will be discussed in Chapter V.

Many ITV programs attempt to elicit overt responses by the students. The repetition of foreign words or the filling in of words in visual or auditory gaps in the lesson, are not interaction in the Gestalt sense, but they are, in a way, feedback. The process of interaction has been attempted by the use of electrical signaling devices, classroom microphones, write-in responses, and the placement of a representational class in the TV studio.[2] It has also been simulated in ersatz Stimulus-Response language training, where the

---

[1]Koffka, Principles of Gestalt Psychology, p. 552.

[2]Dale Wolgamuth, A Comparative Study of Three Techniques of Student Feedback in Television Teaching: The Effectiveness of an Electrical Signal Feedback System (Title IV Project No. 749096, National Defense Education Act of 1958, Grant No. 749096, Department of Health, Education and Welfare, Office of Education, 1961.

television teacher repeats the correct response.[1] This is overt response and feedback, but no television system has been able to judge covert responses in the total behavior situation of the classroom.

Reasoning with Wholes

Reasoning, or problem-solving involves the same principles as any holistic process. It is a form-process which is governed by the same laws as sensation. There is an analogy between an open question and an open figure. The student organizes them in the same ways.[2] In education the process is expanded to learning the most appropriate means of problem closure. The student learns the process of problem-solving by using reasoned approaches in selecting hypotheses, rejecting them and substituting others to reach his goal.[3]

---

[1]William Dean, "A New Approach to Conversational French by Television" (Presentation at the Midwest Telecommunications Conference: June 15, 1971.)

[2]Katz, Gestalt Psychology, p. 286.

[3]Hilgard, Theories of Learning, p. 236.

The work of Pavlov, as reflected in the theories of Watson and Skinner, has influenced teachers to view learning (on a theoretical level at least, practice adapts theories in relation to practical situations), as "repetition, atomization, reward, and punishment."[1] Television has reflected this schoolroom situation in its emphasis on facts and lack of problem solving.[2] As a result, ITV has become a "Rhetoric of conclusions."[3] In the classroom and on television, the problems which are presented, because of the short time between presentation of the question and presentation of the solution, do not create tension toward solution by the student.[4]

---

[1] Inquiry, p. 14

[2] Opportunities for Learning, p. 11.

[3] Inquiry, p. 20.

[4] Luchins, Gestalt and AV Learning, p. 26.

CHAPTER V

SUMMARY, CONCLUSIONS, AND NEED FOR FURTHER RESEARCH

Summary

From the beginning we have attempted to develop the thought that instructional television can be made more effective through the application of Gestalt Learning Theory. The method for this has been to compare the elements of each, draw parallels, and show congruities in the two wholes.

In Chapter I the stated objective is to provide a plan for the improvement of instructional television by applying Gestalt Learning Theory. This is from the viewpoint of the producers and directors of instructional programs. And that is why much of the paper has dealt with the psychological implication of television techniques. As we progressed, however, into Gestalt Psychology, it became increasingly clear, that to be "Gestalt" about the whole thing, these production techniques could not be dealt with in isolation from the whole learning process.

Chapter IV is an attempt to do both. Chapter V will use the comparisons to come to some conclusions that are not explicit in the preceding chapters. It has been stated that to break down a gestalt into its elements loses something of

the whole. In this place we will attempt to restructure the whole.

Conclusions and Recommendations

To study television, apart from the context in which it is used, is pointless. The learning context should be,

1. a superior teacher on television.
2. a production crew, including director, trained in the concepts of learning theory, as well as TV production techniques.
3. a production designed to meet specific needs.
4. a distribution system which allows for local selection of materials.
5. a classroom setting which permits the teacher to adapt the materials to the needs of the individual student.

The selection of a television teacher should not be on the basis of classroom success alone. Television is a different organization. The main aim should be to find someone who can transmit enthusiasm and interest as well as content. Learning is productive thinking. The emphasis of the teacher should be on the transfer of problem-solving to all areas of the student's life. The student will be confronted with more, and different, problems than we can present in a formal learning situation, and he must learn how to deal with them.

The production crew, especially the director, needs not only to be skillful in their work, but to understand what

they are doing. In an ITV program they need to understand what the program is trying to accomplish. This follows directly from the idea that to concentrate upon the part that a crew member plays in the whole does not necessarily lead to his understanding of the whole. If the participants are aware of the principles involved, they can do their part with more understanding, and greater effectiveness.

The ITV production which results from this combination, should reflect the carefully planned objective of the lesson. Specific needs have to be identified and specific measures taken to insure the effectiveness of the lesson. Before facts are presented, they must be placed in a relevant structure. Once the student understands how these facts relate to the problem he can more readily learn them, and apply them to the solution of the problem. The process should be repeated in different contexts so as to give it more general applicability.

The method of distribution of the televised lesson should be flexible enough to allow for local needs to be met. The structure of American schooling is such that local control is the norm. The European system of national education leads to a conformity that is inflexible to localized problems. America is so much more diverse that a master teacher on television, though no doubt superior, cannot hope to serve equally well the needs of Appalachia, Chicago, and the South West at the same time. If the master teacher's televised lesson can be distributed to a local center, then

local decision can determine how he is to be used to meet local needs.

The guidance to learning takes place in the classroom setting. The teacher selects the materials in a sequence and pace which guides the individual student to satisfaction of his cognitive needs. The teacher's use of television along with other visual aids, texts, and personal contact leads the individual to a gestalt of his own. The teacher must consider the student's entier background, his cognitive level of maturation, his interest in the material, and his ability.

The ideal learning gestalt has not been reached, although it has been preached. Educational problems have come to particular prominence since the era of Sputnik. Television was offered as a solution to the problems of quality as well as quantity. It has been shown to be as effective as classroom instruction, but it has not been shown to improve on classroom instruction, perhaps because it has been imposed from outside the learning context. The effectiveness of televised instruction has been troubled by the attitude of the TV-team. The commercial TV show-biz syndrome has taken over for the talking face. Directors rightfully try to make the productions technically perfect, but they tend to become enamored with productional complexity. The object of good Gestalt in a program is best expressed in Koffka's terms to describe "good" in Pragnanz, which include simplicity and conciseness.

The television teacher, in an attempt to adapt his "best" classroom practices to television, has carried over techniques which are not appropriate to the job. This is reflected in the comments of critics who condemn the usual lecture-demonstration format, the emphasis on answers rather than questions, and even the setting designed to simulate a classroom. The televised lesson needs to derive its style, format, or structure from the context of the message to be delivered. The TV lesson must become "compact but significant," compact enough to hold the message, but significant enough to complete the intent.

Need for Further Research

The research in televised instruction has been based on the need to convince administrators of the need for using ITV. The research results have consistently shown that it does teach, and teach as well as classroom instruction. Also, the research has given indication as to the advantages of various combinations of classroom settings and production techniques. This is well expressed by Wilbur Schramm in his chapter on "What We Know about Learning from Televised Instruction," in the book Educational Television: The Next Ten Years. He points out that this research has not been measuring the "intangibles" and they are the real outcomes of learning. This is what Gestalt Learning Theory has been saying. The measurement of skills, or information gained, does not indicate the usefulness of the skills or information. Aside

from the premise that TV does teach as well, perhaps it teaches better, and the research methods used just do not reveal it. Something may be wrong with the tools. The Gestalt suggestion in this case is to devise tools which look at the whole learning process of the individual and use them to determine how he interacts with it.

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

Adkins, Gale. A Study of Critical Requirements for Directors in Educational Television Stations (Lawrence, Kansas: Radio-Television Research, University of Kansas), 1967.

Bettinger, Hoyland. Television Techniques (New York: Harper & Brothers: 1947).

Bretz, Rudy. Techniques of Television Production (New York: McGraw-Hill Book Company, Inc.: 1962).

Costello, Lawrence F. and Gordon, George N. Teach with Television (New York: Hastings House: 1961).

Gattegno, Caleb. Towards a Visual Culture (New York: Outerbridge & Dienstfrey: 1969).

Gordon, George N. Educational Television (New York: The Center for Applied Research in Education, Inc.: 1965).

Hamlyn, D. W. The Psychology of Perception (London: Routledge and Kegan Paul: 2nd imp. 1961).

Hartmann, George W. Gestalt Psychology: A Survey of Facts and Principles (New York: The Ronald Press Company: 1935).

Hilgard, Ernest R. Theories of Learning (New York: Appleton-Century-Crofts: 2nd ed.: 1956).

Hull, Richard B. "A Note on the History behind ETV," Educational Television: The Next Ten Years (Stanford: The Institute for Communication Research), 1962.

Katz, David. Gestalt Psychology: Its Nature and Significance (New York: The Ronald Press Company: 1950).

Koffka, Kurt. Principles of Gestalt Psychology (New York: Harcourt Brace and Company: 1935).

Kohler, Wolfgang. Gestalt Psychology (New York: Liveright: paper bound edition 1970).

Lewis, Colby. The TV Director/Interpreter (New York: Hastings House Publishers: 1968).

Lewis, Philip. Educational Television Guidebook (New York: McGraw-Hill Book Company, Inc.: 1961).

MacLean, Roderick. Television in Education (London: Methuen Educational Ltd.: 1968).

Millerson, Gerald. The Technique of Television Production (New York: Hastings House: 3rd ed. 1964).

Opportunities for Learning: Guidelines for Television, ed. Alexander Frazier (Washington, D. C.: National Education Association: 1960).

Schramm. The Impact of Educational Television (Urbana: National Educational Television and Radio Center: 1960.

Schwab, Joseph J. "Teaching and Learning as Inquiry and the Contributions of Television," Inquiry, ed. Wilma McBride (Washington, D. C.: National Education Association: 1966).

Siegal, Laurence. Instruction: Some Contemporary Viewpoints (San Francisco: Chandler Publishing Company, 1967).

Sshakian, William S. Psychology of Learning: Systems Models, and Theories (Chicago: Markham Publishing Company:

Stasheff, Edward and Bretz, Rudy. The Television Program: Its Direction and Production (New York: Hill and Wang: 4th ed., 1968).

Strom, Robert D. Psychology for the Classroom (New Jersey: Prentice-Hall, Inc.: 1969).

Wertheimer, Max. Productive Thinking (New York: Harper and Row: 1945) ed. note.

Zettle, Herbert. Television Production Handbook (San Francisco: Wadsworth Publishing Company, Inc.: 1961.

Periodicals

Carpenter, C. R. "Boundaries of Learning Theories and Mediators of Learning," Audio Visual Communications Review, 1962, Vol. X, No. 6, pp. 295-306.

Greene, Hugh. "Some Second Thoughts on S-R Theory and ITV," Educational Broadcasting Review, III, No. 1, Feb. 1969, pp. 7-10.

Luchins, Abraham S. "Implications of Gestalt Psychology for AV Learning," Audio Visual Communications Review, Vol. IX, No. 5, Supplement 4, 1961, pp. 7-31.

McIntyre, Charles J. "Applying Learning Theory to Televised Instruction," NAEB Journal, XXIV, No. 6, Nov.-Dec. 1965, pp. 54-63.

Shumacher, Hazen J., Jr. "Applying Learning Principles to Televised Instruction," NAEB Journal, XXV, No. 5, 1966, pp. 1-7.

Williams, Catharine M. "Reexamination of 'No Significant Differences' That ITV Studies Report," Audio Visual Communications Review, Winter 1962, No. 4, pp. 263-265.

Pamphlets

Opportunities for Learning, ed. Alexander Frasier and Harold E. Wigren (Washington, D. C.: National Education Association: 1960), p. 11.

Wolgamuth, Dale. A Comparative Study of Three Techniques of Student Feedback in Television Teaching: The Effectiveness of an Electrical Signal Feedback System (Title IV Project No. 749096, National Defense Education Act of 1958, Grant No. 749096, Department of Health, Education and Welfare, Office of Education, 1961.)

Speech

Dean, William. "A New Approach to Conversational French by Television" (Presentation at the Midwest Telecommunications Conference: June 15, 1971.)