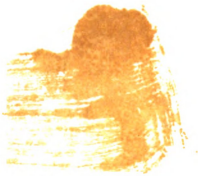
A COMPARISON OF TWO APPROACHES TO TEACHING THE MASTER SCENE CONCEPT OF FILM PRODUCTION: LECTURE VERSUS LECTURE WITH ADDED SIMULATION EXERCISES

Dissertation for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
ROGER A. GRANT
1974



ABSTRACT

A COMPARISON OF TWO APPROACHES TO TEACHING THE MASTER SCENE CONCEPT OF FILM PRODUCTION: LECTURE VERSUS LECTURE WITH ADDED SIMULATION EXERCISES

By

Roger A. Grant

This research compared the effectiveness of two approaches to teaching the master scene concept of motion picture production. One approach was the traditional lecture method. The other employed the lecture with simulation exercises. The simulation approach was used because it provided the student with practice in representative aspects of the real situation encountered in making a film.

All students enrolled (25) in AV323/523, Fundamentals of Motion Picture Production, offered by the Audiovisual Department of the University of Wisconsin--LaCrosse during the fall semester 1973-1974 were the subjects. The class was randomly divided into two groups of almost equal size. One group was taught in the traditional manner and, in addition, received the

treatment. The other group was taught in the traditional manner and did not receive the treatment.

A sequence of three events comprised the treatment. The first and second events mimicked the planning and shooting stages of film making and provided the framework for the third. The third was a simulated editing experience involving the actual construction of a visual statement from available paper footage. The simulated film consisted of three major strips of sketches that depicted in an abbreviated long shot (LS), medium shot (MS) and close-up (CU) form a man catching and then tossing a baseball. Additional frames with extreme close-ups (ECU) were also included.

Two instruments were constructed to gather the data for analysis. They were a posttest, which was administered in the eighth week of the semester, and the editing section of the film evaluation form. Two films, produced by each student, were evaluated.

In order to conduct this experiment, an original simulation was constructed. The model proposed by Crawford and Twelker was used as a guide. The approach covered thirteen steps which are summarized as:

(1) Delineating what is to be taught;

(2) Determining the best approach to teaching it;

(3) Validating the method.

The major difficulty encountered during the research was student mortality. At the time the posttest was administered, both samples were at maximum size (treatment group - 12, control group - 13). Ten students in the treatment group and twelve in the control group completed the first film. The second film was completed by eight in the treatment group and ten in the control group. Two students dropped the class and five requested an incomplete.

Four of the five null hypotheses were rejected. The first hypothesis was rejected at the .05 interval. The second hypothesis was rejected at the .005 interval. The third hypothesis was rejected and was significant at the .001 confidence interval. Hypothesis 4 was rejected at the .005 confidence interval but Hypothesis 5 failed to be rejected at the .05 interval.

These conclusions are based upon the findings summarized above.

1. The lecture with simulation exercises caused students to do better on the posttest than students who were taught in the traditional lecture method. The posttest was comprised of questions derived from the behavioral objectives and implied enabling objectives and covered the planning, shooting and editing stages of film making.

2. The first films made by students who received the lecture with simulation exercises scored higher in the editing section of the film evaluation form than the first films made by the students in the control group. Specifically, their films were closer to these optimum objective criteria:

   Sequence--adequate footage was used for maximized visual potential so that the choice and order of perspectives were harmonious with and explicated the subject of the film.

   Use of perspectives (LS, MS, CU, ECU)--the setting, subject and action were portrayed using a wide variety of technically excellent LS, MS, CU and ECU.

   Matched action--the action was matched accurately and correctly everytime it was logically needed.

   Pacing--was totally harmonious with the subject and the action.

3. Students who received the lecture with simulation exercises constructed a second film that scored higher in the editing section of the film evaluation form than students in the control group. These films, too, were closer to the optimum objective standards defined in conclusion 2 above.

4. Students who received the lecture with simulation exercises included a higher mean number of master scenes in their first film than students who did not receive the treatment.

5. The mean number of master scenes increased in the second films by the students receiving the lecture with simulation exercises, but due to an excessively large number of master scenes by one student the results were not statistically significant. When statistically analyzed this student's raw score deviated from the sample mean to such an extent it resulted in failure to reject the hypothesis.

A COMPARISON OF TWO APPROACHES TO TEACHING THE MASTER SCENE CONCEPT OF FILM PRODUCTION: LECTURE VERSUS LECTURE WITH ADDED SIMULATION EXERCISES

By

Roger A. Grant

A DISSERTATION

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

DOCTOR OF PHILOSOPHY

Department of Instructional Development and Technology

1974

ACKNOWLEDGMENTS

The researcher is indebted to the many helpful people who have offered advice and services throughout the duration of this study.

Appreciation is extended to the researcher's doctoral committee chairman--Dr. Paul W. F. Witt. His guidance and critical analysis, often via long distance, were essential to the refinement of the study and instrumental in the development of more critical thinking.

To the doctoral committee: Dr. Thomas Baldwin, Dr. Erling Jorgensen, and Dr. William Sweetland, whose recommendations delimited the research to a workable and meaningful level. And, to George Sargent, who offered suggestions for the presentation of the statistics.

The researcher is indebted to several people in LaCrosse, Wisconsin, for their contributions. To Mr. Glenn M. Wolfe, a fine filmmaker and teacher who gave unvarnished reactions to ideas involved in this research and who monitored the control group during the administration of the treatment. To Dr. Richard Schoenberger, an expert in the design and use of simulations, who

offered suggestions and resources. To Lorraine Fiet, whose efficient typing assisted the study far more than she may ever realize.

Finally, to my wife Charlotte, who has assumed many roles in this research. Her knowledge of film, ability as an editor and complementary disposition have been invaluable.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

THEORETICAL FRAMEWORK FOR THE STUDY

In this chapter the problem that provided the impetus for this research is described. Also, the purpose, importance, theoretical framework, definition of terms, hypotheses and an overview are included.

Purpose of Study

The purpose of the research is to compare the effectiveness of two approaches to teaching the "master scene" concept of motion picture production--a concept at the core of many effective film communications. One approach is the traditional lecture method. The other employs simulation exercises in addition to the lecture method.

The simulation approach is used because it provides the student with practice in representative aspects of the real situation he will encounter in making a film. By giving the student an opportunity to understand and resolve these alternatives during classroom simulations, it is assumed that he will transfer the concepts to real film making situations in the future.

of a
that
Motic
to ap
Their

deta
appl
a fi
dra
goal
whic
fil
has
of

has
foo
hig
be

to
in
fi

Importance of Study

It has been this researcher's experience and that of a colleague at the University of Wisconsin - LaCrosse that many students taking AV323/523, Fundamentals of Motion Picture Production, fail to learn and are unable to apply the master scene concept when producing films. Their productions are often little better than amateur.

The master scene approach, which is defined in detail below, is employed to provide the filmmaker with ample footage to apply the techniques needed to produce a final version of the scene with optimum visual and dramatic impact. In keeping with this approach, the goal of the filmmaker is to collect raw material from which a refined visual statement will be made when the film is edited. The wider the selection the filmmaker has, the greater the likelihood that full visual potential of the scene will be realized.

For the purpose of this study, implicit in the master scene concept is knowledge of what to do with the footage with optimum visual impact. This involves techniques such as matched action and sequencing which will be elaborated below.

The importance of this study transcends the need to understand the master scene concept. The study involves the interrelationship of visual literacy and film literacy, the need for film literacy, and the role

of motion picture as a language. Included in the remainder of this section is a discussion of the importance of the ability to create and read visual communications.

The Importance of the Study Related to Visual Literacy

Visual literacy is attracting increasing attention even though uncertainty exists about its precise nature and significance.[1] Since visual literacy is a relatively new area of study, it is tentatively defined. Debes defines a hierarchy of over twenty vision competencies that comprise his definition of visual literacy. Examples are: "Distinguish light from dark" through "'read' a spatial arrangement of objects commonly seen together"; and "'read' a sequence of objects or body language arranged to express, so that others may understand it, a personal emotion."[2] Specifically, Debes offers this definition of the concept:

> 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,

---

[1]Walter A. Wittich and Charles F. Schuller, Instructional Technology Its Nature and Use (New York: Harper and Row, 1973), p. 87.

[2]John L. Debes, "The Loom of Visual Literacy," Audiovisual Instruction 14, 8 (October 1969): 25.

> objects, and symbols, natural and man made, that he encounters in his environment. Through the creative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication.[3]

The characteristics of a visually literate person are expressed in attributes and skills. The characteristics are:

- -To read visuals with skill.
- -To write with visuals expressing oneself effectively.
- -To know the grammar and syntax of visual language and be able to apply them.
- -To be familiar with the tools of visual literacy and their use.
- -To appreciate the masterworks of visual literacy.
- -To be able to translate from visual language to verbal language and vice versa.[4]

Visual Communication

Arnheim is a scholar and author of several books concerning visual communication. In his book Visual Thinking, he attempts to re-establish the unity of perception and thought.[5] Arnheim believes that much more is needed than lip service to the use of visuals; that it is not enough to turn on the motion picture projector, more or less diffidently, to provide a few minutes of

---

[3]John L. Debes, "The Loom of Visual Literacy--An Overview," in Proceedings of the First National Conference on Visual Literacy (New York: Putnam Publishing Corp., 1970), p. 14.

[4]Ibid., p. 27.

[5]Rudolf Arnheim, Visual Thinking (Berkeley: University of California Press, 1969), p. 294.

entertainment. What is needed, according to Arnheim, "is the systematic training of visual sensitivity as an indispensable part of any educator's preparation for his profession."[6]

> Visual thinking calls, more broadly, for the ability to see visual shapes as images of the patterns of forces that underlie our existence--functioning of minds, of bodies or machines, the structure of societies or ideas.[7]

Sister Bede Sullivan offers this corollary: "If you are going to communicate effectively in the last half of the twentieth century, learn the skills of visual language, learn to communicate on film."[8]

Culkin states that the fact of the media's existence is challenge enough. The information levels are, for the first time in the history of man, higher outside the classroom than inside it. The students of today live in both worlds. They need to understand the components of classroom communication and those of the outside world as well as their modes of interaction.[9]

Our environment is a product of our times. Culkin wrote that many have reacted to it, few have

---

[6]Ibid., p. 315.

[7]Ibid.

[8]Sister Bede Sullivan, Movies: Universal Language (Notre Dame, Indiana: Fides Publishers, Inc., 1967), p. 34.

[9]John M. Culkin, "Towards Mediacy: An Extension of Film and Television Study," Audiovisual Instruction 13, 1 (January 1968): 11-12.

refl

abou

ener

a 't

lige

unde

fere

is

to

ing

are

and

du

—

(B
F.

reflected about it and even fewer have done anything about it. Within the short span of fifty years we have emerged from a speech- and print-dominated culture into a "total-information" and "poly-media" culture. Intelligent and rewarding living within this culture demands understanding of all these media.[10]

Arnheim approaches the same belief from a different point of view.

> We must see to it that in every field of study, whether natural or social science, geography or history, or literature, the student proceeds from the mere husks or communication to the play of the real forces to which communication points; and these forces are most efficiently conceived and handled by our highest sense--the sense of vision. To put it practically: We must preserve for secondary and higher education the approach used so successfully at the level at which, I believe, education in the United States does its finest job, namely, kindergarten and the first grade.[11]

It is this researcher's conviction that Arnheim is correct. Educators must improve the visual approach to education at the higher education level by supplementing the established body of knowledge in several visual areas (including film) with additional research findings and writings in visual literacy. Students in film production courses would gain by this addition. Key groups

---

[10] Ibid., p. 12.

[11] Rudolf Arnheim, Toward a Psychology of Art (Berkeley: University of California Press, 1966), p. 146.

would benefit from an increased capacity to comprehend and execute visual forms of communication.

Sohn elaborates on the need to understand the visual media. "The visual media are powerful, and we should understand how they work, what they do to us and why, and how we can work with them to create exciting, enjoyable classrooms that stimulate creativity and an awareness of what the environment 'is' and how to cope with it."[12]

McLuhan in Explorations in Communication promotes this need to understand media in a general sense.

> The aim of this anthology is to develop our awareness about print and the new technologies of communication so that we can orchestrate them, minimize their mutual frustrations and clashes, and get the best out of each in the educational process. The present conflict leads to elimination of the motive to learn and to the diminution of interest in previous achievement: it leads to the loss of sense relevance. Without an understanding of media grammars, we cannot hope to achieve a contemporary awareness of the world in which we live.[13]

McLuhan also believes that new mass media, including film, must be incorporated in the educational system. He foresees the weakening or corrupting of

---

[12]David A. Sohn, "See How They Run . . . ," Media and Methods 6, 3 (November 1969): 39.

[13]Culkin, "Towards Mediacy," p. 12.

previously achieved levels of verbal and pictorial culture if these new languages are not mastered.[14]

Arnheim states that the visual medium is superior to words because it offers structural equivalents to all characteristics of objects, events and relations. There are as many variations to visual shapes as there are speech sounds, but of particular importance is that they can be organized according to readily definable patterns. Arnheim says the principal value of the visual medium is that it can be represented in two- and three-dimensional space whereas verbal language is in a one-dimensional sequence. This polydimensional area readily yields good thought models of physical objects or events as well as the isomorphical representation of the dimensions needed for theoretical reasoning.[15]

In light of the extensive viewing of visual media during the last few decades, it is difficult to say Americans are visually illiterate. Perhaps a more appropriate label is semi-literate. The Forsdales state that although very few Americans are film illiterates, this does not mean, however, that training in film literacy is not necessary.

---

[14]Marshall McLuhan, "Classroom Without Walls," Perspectives on the Study of Film, ed. John Stuart Katz (Boston: Little, Brown and Company, 1971), pp. 22-23.

[15]Arnheim, Visual Thinking, p. 232.

> When one speaks of a literate man, one does not generally mean merely that a person knows his ABC's or that he can read or write at a simple level. One means, rather, that he knows literature, that he can place works in context, that he can make subtle distinctions in meaning, and the like.[16]

Compared to a literate man, most Americans would have to be termed semi-literate. This notion is substantiated by the Forsdales' observation of the " . . . relatively simplistic level of both film message and film style . . . " in many current motion pictures.[17] Sheratsky had a similar belief, although he may have overstated his case when he wrote, "By the time they have graduated from high schools, too many students are visually illiterate. Many of our students look yet do not see."[18]

Arrowsmith wrote:

> I know of no art with such potential for stating our problems, complexities, anxieties, and powers more naturally or comprehensively than film. And this is why film seems to me a "natural" curriculum--a curriculum-in-process, a creative project--with which to replace much of what we now do in literature, philosophy and humanities.[19]

---

[16]Joan Rosengren Forsdale and Louis Forsdale, "Film Literacy," AV Communication Review 18, 3 (Fall 1970): 272.

[17]Ibid., p. 271.

[18]Rodney E. Sheratsky, "Freaking Around with Films," Media and Methods 7, 3 (November 1970): 42.

[19]William Arrowsmith, "Film as Educator," Perspectives on the Study of Film, ed. John Stuart Katz (Boston: Little, Brown and Company, 1971), p. 33.

With the preceding providing impetus, there is certainly a need for improved film literacy and related research in a country in which the rate of student use of film to books has been estimated at seven to one.[20]

Film Production as a Means to Improved Visual Literacy

Various means are available to achieve increased film literacy which, in turn, would contribute to improved visual literacy. The film appreciation class is one example. With this approach, a number of films are generally viewed and discussed. A distinguished filmmaker may visit the class or the writings of distinguished filmmakers or critics may be read. While it is an important contributor to film literacy, this approach alone does not suffice. The traditional film appreciation class places the student in a passive position; he is a receiver of messages via film media; not a communicator via film. This situation is similar to such absurdities as learning to read but not to write--to listen yet never speak.

A film production course is a logical and essential complement to the film appreciation course. Beveridge, in the preface to Film Making in Schools, wrote, "By learning to make a film, the student inevitably develops

---

[20]Sullivan, Movies, p. xi.

a knowledge of film methods and film values. His attitude as a viewer changes from that of a passive spectator to active adjudicator."[21]

By understanding motion picture production techniques, students will be able to understand film more fully. It follows that by producing their own motion pictures, students will be better able to understand the techniques.

Witt stated that the younger generation must be taught to be discriminating users of the mass media of communication. He noted local student productions of eight millimeter films as the means by which students may learn to formulate standards for judging motion pictures and for evaluating television programs.[22]

However, much of what has been stated above refers to the passive nature of film viewing. The logic is that the individual should make films so that he may be better able to communicate visually as well as be able to appreciate other films. Markwardt synthesized that the users of any legitimate language cannot be taught by passive users of that language. People in our

---

[21]Douglas Loundes, Film Making in Schools (New York: Watson-Guptill Publications, 1968), p. 10.

[22]Paul W. F. Witt, "Film Grammar and Dictionary in 8mm Sound," 8 mm Sound Film and Education, ed. Louis Forsdale (New York: Bureau of Publications, Teachers College, Columbia University, 1962), p. 133.

culture do not master writing and speaking only to be better readers and listeners. A legitimate language requires communication and that occurs only when both the active and passive functions are given equal stress.[23]

Debes' attributes of the visually literate person as enumerated on page 4 comprise the essential active and passive characteristics of the visually literate individual. Since film literacy is a part of the encompassing concept of visual literacy, the same set of attributes may be used to define a person literate in film.

This research will contribute to the existing knowledge of the active function of the visually literate person. Interpreting Debes' characteristics, this research will:

(1) Show the filmmaker how to express himself filmically;

(2) Promote an understanding of the grammar and syntax of film and their application;

(3) Enable the filmmaker to translate from verbal language into film language.

This research will contribute to the refinement of the motion picture as a language.

---

[23]Dean M. Markwardt, "Student Film Production as an Educational Activity at the Secondary Level," a seminar paper, Wisconsin State University - LaCrosse, July, 1971, p. 22.

With this reasoning in mind, a study has been designed to test the effectiveness of a treatment of simulation exercises with lecture to teaching the master scene aspect of film production. The traditional lecture without the simulation exercises will be compared with the treatment. Analysis of the students' films may indicate whether one is more effective than the other for preparing the filmmaker who wishes to communicate powerful, comprehensive and literate visual messages.

Definition of Terms

Scene.--A piece of the external world recorded on film by a motion picture camera. In a technical sense, a scene is confined to one or more renderings (called takes) of an action, as prescribed by the script, recorded in a camera, or rendered visible on the film itself.[24] In comparison with writing, a scene may be taken as equal to a paragraph.[25]

Sequence.--A section of film comprised of related scenes that is more or less complete in itself.[26] In

---

[24]Raymond Spottiswoode, Film and Its Techniques (Berkeley: University of California Press, 1963), p. 460.

[25]Ibid., p. 462.

[26]Jerrold E. Kemp, Planning and Producing Audio-visual Materials (Scranton, Pa.: Chandler Publishing Co., 1968), p. 245.

a comparison with writing, a sequence may be taken as equal to a chapter.[27]

Shot.--Motion picture footage exposed when the shutter release button is depressed.[28] Shots are often called scenes and are characterized according to camera angle and distance from subject. In comparison with writing, a shot may be taken as equal to a sentence.[29]

Long Shot (LS).--An overall view of a subject in its setting.[30]

Medium Shot (MS).--A view closer than the long shot that eliminates unnecessary background.[31]

Close-up (CU).--A camera view closer than the medium shot concentrates on the subject or a part of it.[32] An extreme close-up (ECU) is a variation of this shot that shows only a part of the subject.

---

[27]Spottiswoode, Techniques, p. 462.

[28]Kemp, Audiovisual Materials, p. 245.

[29]Spottiswoode, Techniques, p. 462.

[30]Kemp, Audiovisual Materials, p. 244.

[31]Ibid.

[32]Ibid., p. 243.

Population.--For this study the population is the students enrolled in AV323/523, Fundamentals of Motion Picture Production, during the fall semester 1973.

Master Scene.--Film footage of an entire action taken from a long shot (LS) perspective. The master scene may be re-photographed from one or more different camera angles. Each time the scene is shot the action must be repeated in its entirety. After the master scene is complete, the action or portions of it are re-shot from a medium shot (MS) perspective and then again from a close-up (CU) perspective. The MS and CU sequences may also be shot from different angles.[33]

Matched Action.--The smooth continuation of an action between two juxtaposed and related pieces of film.[34]

Simulation.--" . . . (is) condensed representations of reality or simplified models of the real world process."[35]

---

[33]Kenneth H. Roberts and Win Sharples, Jr., A Primer for Film-Making (New York: Pegasus Publishers, 1971), pp. 127-28.

[34]Kemp, Audiovisual Materials, p. 244.

[35]Clark C. Abt, "Games Pupils Play: Why Games Win Converts," Nations Schools 80 (October 1967): 92.

mind:

(1

(

(

gener

hypot

follo

H

H

Assumptions

This research is proposed with the following in mind:

(1) It is assumed that the students enrolled in the Fundamentals of Motion Picture Production course will have sufficient interest in film to complete the requirements of the course.

(2) It is assumed that some ways of teaching concepts of film production are better than others.

(3) It is assumed that students enrolled in AV323/523, Fundamentals of Motion Picture Production, know little about film production prior to enrolling in the class.

Hypotheses

The preceding background is the impetus for the generation of the following hypotheses. Identical hypotheses, stated in statistically testable form, follow in Chapter III.

H_1: Students receiving the lecture with simulation exercises will be able to recognize more concepts directly and indirectly related to the planning, shooting and editing of a master scene than students receiving the traditional lecture.

H_2: Students receiving the lecture with simulation exercises will produce films that are edited better than students receiving the traditional lecture.

H_3: Students receiving the lecture with simulation exercises will include more master scenes in their films than students taught by the traditional method.

Operationalization of Hypotheses

The hypotheses stated above are in general terms and must be operationalized to provide a format to gather data for statistical analysis.

A posttest and an evaluation form are employed to collect data. Their design and use are described in Chapter III.

The posttest is designed to collect data for the testing of Hypothesis 1. It is written directly from the behavioral objectives and implied enabling objectives defined in Appendix A. The posttest is in Appendix B.

The editing section of the film evaluation form is used to collect data to test Hypothesis 2. Four concepts comprise the editing section: sequence, use of perspectives, matched action and pacing.

Hypothesis 3 is operational as it is stated. A simple tally of the number of master scenes for each film is needed for statistical analysis.

Overview

In the first chapter, the purpose of the study is presented. Among the other points covered are the need for the study, its importance as related to visual literacy, and film production as a means to improve

visual literacy. Definitions, descriptive hypotheses and assumptions of the study are also stated.

In Chapter II, pertinent related literature is reviewed. The emphasis is on the status of media research and related research in film and simulation for instructional purposes.

Procedures and methodology are described in Chapter III. The sample, operational measures, testable hypotheses, design and analysis are described in detail.

The design procedures for the development of an original simulation are covered in Chapter IV. In Chapter V, the analysis of results is presented. The summary, conclusions and implications for future research are presented in Chapter VI.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

According to Allen, media research has been conducted for more than fifty years.[1] Despite this relatively long period, no research was encountered that dealt specifically with teaching film production or using an original simulation to teach parallel ideas--regardless of the discipline. However, research and/or articles about film, film production and simulation that provided related background information concerning this research are reported in this chapter. The lack of similar research further indicates the need for this study.

Allen said that media educators need to consider the character of instructional media research. Thousands of highly diverse studies have been conducted, ranging from simple status studies to complex multivariate experimental investigations. During the early years,

---

[1]William H. Allen, "What Do 50 Years of Media Research Tell Us?" Audiovisual Instruction 18 (March 1973): 48.

media research sought to identify itself in the repertoire of instructional techniques.[2]

The major problem encountered by the researcher, according to Allen, is the delineation of the specific conditions under which certain media should be employed, their design and with what kinds of learners. Researchers should also look to the failings of previous research to see what conclusions can be drawn with certainty.[3]

Hoban said that educators lack an integrated and unified educational system in school systems and universities.[4] He referred to the Ford Foundation report, A Foundation Goes to School, and reiterated several conclusions that stand out.

1. Schools and universities have little capacity for respecting or understanding each other.
2. Universities' knowledge is not as useful or readily available as many hope or expect.
3. Universities often lack defensible proposals for educational innovation.
4. The question about the university's relations with schools is not so much lack of university competence as lack of sufficient commitment and the general value system prevailing at universities. Academic and financial credit goes to faculty members who publish research and promote new ideas, rather than to those who demonstrate changes in the real-world settings.
5. Academics who serve as consultants to schools in innovative programs gain added status by

---

[2]Ibid.

[3]Ibid.

[4]Charles F. Hoban, "A Current View of the Future of Theory and Research in Educational Communications," Audiovisual Instruction 24 (January 1974): 31.

> increasing the number of their consulting commitments rather than by maintaining fewer commitments and meeting them better.[5]

Hoban interpreted these conclusions by inferring that the future of theory and research in educational communications, media, and technology, initiated by university faculty, will continue to have little "immediate relevance or effect on schools' efforts to improve their programs."[6] There is much work ahead to construct an educational system of mutual interest and support.

Hoban is committed to the need to recognize the basic paradigm of technology--the systems concept. He believes that the "systems concept" has been misused and abused and is thus viewed with disfavor.[7]

The systems concept involves a minimum of three phases when applied.

1. Systems analysis and design, which is primarily an analytical process.
2. System development, which is accomplished through the tedious and demanding process of research and development.
3. Systems management, which is primarily an administrative task and inevitably done very badly in institutional education from behind the well-guarded desks of the principal, the superintendent, or vice-president for academic affairs.[8]

---

[5]Ibid.

[6]Ibid.

[7]Ibid., p. 35.

[8]Ibid.

The future of instructional technology is not in machinery. Engineers are quite capable of meeting current and future needs.

> . . . the future is the development and promulgation of understanding and application of the systems concept.
>
> Those engaged in instructional design are making a good beginning in this direction but it is only a beginning . . . only a relatively few are engaged actively in instructional design.[9]

This research is concerned with instructional design and employs the systems approach to design an original simulation (Chapter IV). Since no closely related studies were encountered in the literature, research and articles of marginal relevance are reviewed below in sections entitled "Moving Picture Production" and "Simulation."

Moving Picture Production

As was previously mentioned, little research has been conducted that is related to teaching moving picture production. The dissertations in film included such subject areas as film manufacturing, directors, elements, learning, use and content analysis. The films of Fellini, gangster films and film as a process of change are representative subjects of other film dissertations. However, some research and articles pertinent to this research are reviewed below.

---

[9]Ibid.

Elgabri noted well-founded criticism made on film schools and their inability to produce talented filmmakers.[10] One scholar suggested that the film teacher, to be truly effective, should have a Ph.D. Elgabri agreed that this may be true but suggested that a good film teacher should also have experience producing films.

Specifically, Elgabri stated that a film teacher should be able to define his objectives clearly and precisely. He asked if film history, appreciation and criticism, theories and film making should be separated. In essence, can one appreciate a film or critique it without knowledge of film production or, conversely, can one make a good film without knowledge of appreciation, film history, theories, etc.? One undeniable notion is that, without film, the others would not exist. Thus, the teaching of film making is central to the existence of other film-related courses.[11]

Planning is essential to good film production, according to Elgabri, regardless of the type of film. A student should know how an idea is developed, treated and scripted. Instructors, too, must be able to develop new methods of teaching film for optimum student learning.[12]

---

[10]Ali Elgabri, "Teaching Film Making in the University," Audiovisual Instruction 15 (November 1970): 36.

[11]Ibid.

[12]Ibid., p. 37.

The crux of Elgabri's view of teaching film production is:

> The fallacy of having students who come to a film production course take up cameras and go out to record whatever they like, labeling this as a "visual experience," seems to be a luxury an academic institution cannot afford. The difference between the duties of professional instructors and pseudo-professional teachers of film is not going to be established either rhetorically, or literally.[13]

McGregor established a procedure for the consideration and presentation of concepts and experiences which would normally be dealt with in a first course in film production.[14] The study was designed for teachers of motion picture production courses in high schools, colleges and adult education. His approach was informally patterned after the systems approach and first assessed the needs and overall goals for a mediated basic film production course.

The procedural considerations for his design were listed as follows:

1. Establish the overall course objectives.
2. Delimit the scope of the course and divide the content into ten sessions.
3. Offer an alternative to the essentially fixed-paced linear procedure currently in use in most film production courses.

---

[13]Ibid., p. 76.

[14]Edgar Russell McGregor, "A Design for a Mediated First Course in Film Production," Dissertation Abstracts International 32 (1971): 3342-A.

4. Separate the subject matter into single concepts and arrange these into concept clusters.
5. Establish performance objectives for each concept.
6. Consider the type of learning involved in each concept as included.
7. Develop a rationale for the inclusion of all the materials which will be taught.
8. Select the teaching strategies or presentation techniques most appropriate in elucidating the learning task at hand.
9. Choose the media format best suited to present the concept.
10. Create new materials and methods to effectively implement the instruction.
11. Suggest some informal criteria for judging the appropriateness and effectiveness of the course in meeting its objectives.[15]

The goals McGregor envisioned for his proposed course were to enrich the teaching/learning process; to individualize it; and to place the burden of failure on the teacher, his assistants and instructional strategies.

Erickson studied the effectiveness of pupil-teacher film-making as a method of teaching ninth-grade general science compared to using available motion pictures. Results of the research enabled the answering of these questions:

1. Which method was more effective in terms of the acquisition of knowledge and in the ability to recognize the application of knowledge in a variety of situations?
2. Which method was more effective as regards the permanence of learning?

---

[15]Ibid.

3. Which method is likely to be more costly?
4. Which method did students prefer?[16]

Significant differences in achievement at the 2 and 5 per cent levels respectively were found for the two methods in the acquisition of information and the ability to apply information to novel situations. The film presentation method was favored. Neither method was proven superior with regard to retention of learning. Erickson also found the film production method costlier, and that most students preferred it even though they believed they learned less science by that method.[17]

Stern discovered that students interested in film could make a "mock" film production and learn, vicariously, several of the same skills that real film production teaches.[18] With this technique, the student selects, organizes and assembles magazine pictures in a desired sequence. Dialogue is added, as with comic strips, and the pictures are stapled to or taped to a long roll of paper. Titles and credits can then be added. The strip is rolled through an opaque projector and coordinated with a sound track.

---

[16]Carlton W. H. Erickson, "The Effectiveness of Joint Pupil-Teacher Motion Picture Production as a Method of Teaching General Science (Volumes I and II)," Dissertation Abstracts International 15 (1955): 2488.

[17]Ibid., p. 2489.

[18]Malcolm Stern, "Mock Films," Media and Methods 8, 3 (November 1971): 51.

Stern found the mock films to be an inexpensive way of teaching many of the skills commonly associated with actual film making. " . . . students must write a script, determine if the shot should be color or black and white or mixed, select the type of shot needed (pan, close-up), edit the pictures, splice the film, organize the sequence, synchronize the sound, preview the final product, show it to a live audience, and finally, evaluate the success or failure of their film."[19]

Several students were sufficiently interested to purchase cameras and start to make real films. The students credited their mock film experience with teaching them the necessity of planning and organizing before the expense of real film was a consideration.

Riggsby studied the cognitive retention of sixth-grade students engaged in film production during a four-week study of Mexico.[20] These students were compared to three other groups of students engaged in similar teacher-designed and student-selected, and teacher's guide-recommended activities.

The results of the study were:

---

[19]Ibid.

[20]Dutchie Sellers Riggsby, "Film Production as an Activity in Sixth Grade Social Studies: A Study of Cognitive Retention," Dissertation Abstracts International 33 (1972): 1083-A.

1. There was no significant difference at the 0.05 level of confidence between the scores on the Unit II test for students in each group,
2. there was no significant difference between the scores on the Student Preference Inventory for students in each group, and
3. there was no significant difference between the scores on the Student Rating Scale for students in each group.[21]

Jasnosz reported, when emphasizing activities and learning experiences designed to meet film production needs and interests of the students, current objectives included these functions:

1. Self expression, the process by which an individual satisfies an innate need to communicate his thoughts and emotions to others;
2. Observation, the process of recording sense impressions, clarifying knowledge and understanding, and constructing aids to skill development;
3. Appreciation, the process of responding qualitatively to the modes of communication received from others.[22]

Simulation

Extensive research is published regarding simulation and simulation gaming techniques. As with moving picture production, no research was found that related to the topic of using simulation to teach film technique. The research and articles reported below are related to this study but marginally so.

---

[21] Ibid.

[22] Thomas A. Jasnosz, "Zooming in on Film Production: VICOED," Educational Screen and Audiovisual Guide 50, 2 (February 1971): 11.

Kurfman elaborated on the use of simulation to involve students. He believed that a primary assumption underlying simulations was the abandonment, by students, of the usual passive-receptive behaviors and the assumption of active behavior patterns with a high level of self-motivation.[23]

Wilms and Steinbrink found that simulation games may provide different levels of learning for students with varied abilities. Slow learners concentrated on descriptive elements or the more concrete. Faster students developed abstract analytical concepts of cause and effect and transferred them to additional similar situations.[24]

Barton offered the following observations in defining the term "simulate."

> A simulation, although it is a thing in itself, is meaningful to its creators and to its users in terms of other things. To simulate also means to give the effect of something else--so that the meaning and usefulness of a simulation is not merely in a visual or sensory likeness, but in a similarity of ideas or conceptual likeness as well.[25]

---

[23]Dana Kurfman and Ina M. Phillips, Using Simulation to Involve Students (Washington, D.C.: The Association of American Geographers, November, 1971) 70, p. 493.

[24]Douglas C. Wilms and John E. Steinbrink, "Education: A Simulation of Contemporary Politics," The Journal of Geography 70 (November 1971): 493.

[25]Richard F. Barton, A Primer on Simulation and Gaming (Englewood Cliffs, N.J.: Prentice-Hall, 1970), p. 1.

Clark Abt, a leading simulation game designer, offered this definition:

> All games are simulations, but not all simulations are games. Games are one kind of simulation, distinguished from others such as computer simulation, dramatic plays, or moving pictures. Simulations, broadly defined, are condensed representations of reality or simplified models of the real world process. For educational purposes, static simulation models have long been in use--model houses, ships, maps, and globes, for instance. Simulation models of changing systems are the most recent developments.[26]

[It should be noted at this point that this study does not involve simulation gaming. A description of simulation gaming technique is included, however, to show the distinction between regular simulation and gaming.]

Coleman wrote about the general characteristics of educational simulation games and related that:

> Educational games tend to have a number of common characteristics. First, they are simplifications of the real world they abstract. Second, they progress as a series of plays or cycles, each representing some actual period of time and sequence of events. Third, they usually compress time and expedite play. Fourth, they usually employ a simulated environment representing those aspects of the real world relevant to the objectives of the game. Fifth, in requiring appropriate decision making at successive cycles of play, they usually instruct students to act out roles. Finally, they generally involve competition between players or teams.[27]

---

[26]Clark C. Abt, "Games Pupils Play: Why Games Win Converts," Nations Schools 80 (October 1967): 92.

[27]James S. Coleman, "Academic Games and Learning," National Association of Secondary School Principals Bulletin 52 (February 1968): 62-63.

Adams found (although using simulation gaming technique) implications applicable to nongaming involvement. He discerned that students become involved in learning activities when they feel that success is possible and that the experiences are productive in terms of learning. Adams also found a cyclical relationship between "enjoyment, involvement, perceived learning, and winning."[28]

A series of occupational simulation kits were developed under the direction of John Krumboltz at Stanford. The kits were tested in several high school districts in the San Francisco Bay area. Over 1,000 high school students participated and briefly experienced occupational simulations. They actively engaged in tasks performed by electronic technicians, policemen, appliance servicemen, lab and x-ray technicians, salesmen and accountants.[29]

The simulation or job experience kits were results of job analyses of each occupation in question.

---

[28]Dennis M. Adams, "Education, Theory and Practice--Some Aspects of Simulation Gaming and Group Process," Dissertation Abstracts International 33 (1973): 5611-A.

[29]Richard Gilmore Johnson, "Simulation Technique in Career Development," American Vocational Journal 45, 6 (September 1970): 30.

Representative problems encountered with each job were selected and presented in a realistic but simplified manner.[30]

The Stanford findings were the first truly experimental research employing job experience kits. The results of these studies are briefly summarized thus:

> Students of widely varying ability and socio-economic backgrounds were enthusiastic about their experience with the simulations and indicated a desire to repeat the activity with other occupations. The simulations aroused significantly more interest in the occupations than did the monographs.
>
> A counselor from one of the schools reported that many of her counselees who had worked with the job experience kits as sophomores mentioned the experience in counseling interviews during their junior year. The counselor expressed surprise at the long-term effect of the experience.
>
> In some cases, the simulations produced more subsequent explorations at the library and other informational sources than did the monographs.
>
> Although they were not tested in extremely disadvantaged communities, the simulation materials were found to be particularly effective with students from schools in lower socio-economic communities.[31]

Law tested the feasibility of using three types of simulation experiences prior to student teaching as a means of developing (1) awareness of critical teaching situations, (2) ability to analyze them and (3) confidence in dealing with them. Management, behavior and individual differences were isolated, as evidenced by prior research, as critical elements in teaching. The in-basket simulation technique was used for the management category,

---

[30] Ibid., p. 31.

[31] Ibid., p. 32.

a video-tape technique for the behavior category, and a film role playing technique for the individual differences category.[32]

The three types of simulation experiences yielded higher mean teaching confidence scores than did the pre-student teaching discussion experiences. The video-taped simulations dealing with behavior and the in-basket simulations dealing with management yielded higher teaching confidence mean gain scores than did the discussion experiences. And, statistically significant confidence gain scores resulted from the video-taped simulation in the behavior category.[33]

The participating students indicated a positive attitude toward simulation experiences. They felt an increased awareness of possible classroom incidents and confidence in their ability to identify the nature of incidents as well as to cope with them.[34]

A study was designed to evaluate changes in cognitive learning and attitudes that could be attributed to participating in a simulation unit. The treatment was randomly assigned to two political science classes

---

[32]Eloise Jeannette Law, "Feasibility of Three Types of Simulation Experiences in Preparation for Student Teaching in Home Economics," Dissertation Abstracts International 33 (1973): 5940-B.

[33]Ibid.

[34]Ibid.

(N-67). The group receiving the simulation participated in a four-hour unit; the control group was taught in a "lecture-question-answer" manner.[35]

No statistically significant differences in cognitive learning were found between students receiving the simulation and taught by the "lecture-question-answer" method. Within the limitations of the study, the analyses showed the simulation produced attitudes and resulted in "polarization of feelings toward government."[36]

Coats compared simulation technique and traditional teaching in eleventh-grade American history. The principal findings were:

1. The group of students taught using the simulation approach showed significantly greater achievement, more positive attitude toward the class, and stronger motivation in the class than the group of students taught using the traditional approach.
2. Significantly students in the group taught using the simulation approach showed a positive change in attitude toward the class and in motivation whereas no significant difference was found between the groups in the number of students showing progress in achievement.

---

[35]Otto A. Heinkel, "Evaluation of Simulation as a Teaching Device," The Journal of Experimental Education 38, 3 (Spring 1970): 32.

[36]Ibid.

3. The group of students taught by the simulation approach demonstrated a greater positive change in interpersonal relations within the group than the group of students taught by the traditional approach.[37]

Summary

The review of pertinent literature has involved three areas. First, in an introductory section, the past and future status of media research was noted. Moving picture production and simulation were the topical areas for literature review.

Media research has been going on for more than fifty years. During the early years media research sought to identify itself in the repertoire of instructional techniques. Allen defined the major problem encountered by the researcher as the delineation of the specific conditions under which media should be employed, its design and with what kinds of learners.

Hoban believes that educators lack an integrated and unified educational system in school systems and universities. He referred to a Ford Foundation report. He believes the future of research will continue to have little relevance or effect on schools' efforts to improve their programs. Hoban is committed to the systems

---

[37]James Harold Coats, Jr., "A Comparative Study of the Effects of Simulation and Traditional Teaching on Student Achievement, Attitude, Motivation, and Interpersonal Relations in Eleventh Grade American History," Dissertation Abstracts International 34, 6 (December 1973): 3014-A.

concept and believes it is looked upon with disfavor because it has been misused and abused. He foresees the future of instructional technology aligned with the "development and promulgation of understanding and application of the systems concept."[38]

No research was encountered concerning the teaching of moving picture production techniques. Several articles and abstracts were found that were marginally related.

Elgabri stated that film teachers should be able to define objectives clearly and precisely. He said the teaching of film making is central to the existence of other film-related courses, and instructors must be able to develop new methods of teaching film.

McGregor established a procedure for the consideration and presentation of concepts and experiences for a first course in film production. McGregor used the systems approach to enrich the teaching/learning process; to individualize it; and to place the burden of failure on the teacher, his assistants and instructional strategies.

Erickson found a film presentation method to be more effective than teacher/student film production for the acquisition of knowledge in ninth-grade science. He

---

[38]Hoban, "Educational Communications," p. 35.

also found the film production method costlier but that students preferred it even though they believed they learned less science by that method.

Stein discovered that students interested in film could make a "mock" film production and learn several of the same skills that real film production teaches. Several students were sufficiently motivated to start real film productions.

Riggsby found no significant difference between the treatment and control groups when cognitive retention of sixth-grade students engaged in film production was tested.

Jasnosz reported the functions of self-expression, observation and appreciation as important objectives to meet film production needs and interests of the students.

As with moving picture production, little research with simulation was found to be directly applicable to this study. Kurfman found simulation to involve students to a high level of self-motivation. Wilms and Steinbrink found that simulation games may provide different levels of learning for students of varied ability.

Barton and Abt defined simulation and distinguished simulation gaming. "Simulations . . . are condensed representations of reality or simplified models of the real world process."[39]

---

[39]Abt, "Games Pupils Play," p. 92.

Adams found students became involved in learning activities when they felt success is possible and that the experiences were productive in terms of learning. Krumboltz of Stanford developed occupational simulation kits and tested them in area secondary schools. The simulations significantly aroused more interest in the selected occupations than did monographs.

Law found that the use of three types of simulations before student teaching yielded higher mean teaching confidence scores than did discussion experiences.

Heinkel reported no significant difference found in cognitive learning and attitudes between students receiving the simulation and students taught by a "lecture-question-answer" method.

Coat compared simulation technique with original teaching and found simulation to be significantly superior for achievement, positive attitude, motivation and interpersonal relations within the group.

Conclusion

As was mentioned above, no research was encountered that dealt specifically with teaching film production or using a simulation to teach parallel ideas. The research and/or articles about film, film production and simulation that provided related background

information were reported. This paucity of research indicated the need for this and similar studies.

Two studies reported in this chapter were particularly relevant to the nature of this research. Stern's experimentation with mock film productions was closest to the concepts involved in this study. He found the mock films to be an inexpensive way of teaching many of the skills commonly associated with actual film making. Unfortunately, his approach was not attempted in a rigorous experimental environment so his conclusions were conjecture.

The occupational simulation kits developed by Krumboltz of Stanford were pertinent. Although the intention of his kits was very different from the simulation exercises in this study, the fact that the simulations significantly aroused more interest in the students was relevant.

CHAPTER III

DESIGN OF THE STUDY

In Chapter III, the sample is defined and procedures for administering the treatment are described. The data collection instruments and procedures are listed (with analysis of reliability when applicable). Also reported are the design, testable hypotheses, limitations of the study and method of analysis.

Sample

The entire student enrollment in AV323/523, Fundamentals of Motion Picture Production, offered by the Audiovisual Department of the University of Wisconsin - LaCrosse during the fall semester of the 1973-74 academic year constituted the population and the sample. The class was randomly divided into two groups of equal size. One group received instruction in the traditional manner and, in addition, received the treatment. The other group took the class as it has been traditionally taught and did not receive the treatment.

A total of twenty-three students finished the semester although seven were unable to complete all of the requirements and were given incompletes. Of the twenty-three students, fourteen were enrolled as undergraduates and nine as graduate students. Two of the undergraduates audited the class so they received no credit for it. There were more male students enrolled (17) than female (6).

There were sixteen full-time students enrolled, both undergraduate and graduate. Included in the contingent of part-time students comprising the remainder of the population were: an elementary school teacher, an Episcopal priest, a construction worker, a factory worker, an attorney and an advertising agent.

Fifteen or the majority of the students were in their early to mid-twenties. Three were under twenty, four were in their low to mid-thirties and one was about fifty years old.

All but two of the students were living in the city of LaCrosse or an immediate suburb. The two non-LaCrosse residents lived in small villages, each approximately twenty-five miles from the university.

Nineteen of the students were native Americans. One was a naturalized American from Australia and three were foreign students from Hong Kong.

In summary, the class was comprised of a core of young undergraduate students, a few foreign students and a few professional people from the community.

Procedures

To recapitulate briefly, the primary purpose of this research was to investigate the effectiveness of simulation exercises in teaching the master scene concept of motion picture production.

Because some knowledge of film production is needed before the treatment can be administered effectively, the simulation experience was administered to the sample September 12, 1973, during the third class meeting. The class met one evening per week for a two and one-half hour session.

During the first session an orientation to the photographic facility was given as well as a description of the course content. Also during the first session, a description of the Super 8mm cameras, which were supplied by the Audiovisual Department, was offered and some time allotted for the students to experiment with them. Two films were screened--"Why Man Creates," and "The Art of the Motion Picture." Both were used because they are filmically well done and would hopefully excite the students about working with the medium.

During the second session the vocabulary of film-making was discussed along with principles of

continuity, the master scene technique, and the mechanics of editing. Two films were shown--"Film Appreciation Elements" and "Elements of TV Newsfilm." The former depicted a professional film company shooting and then editing a master scene. The latter--a film the researcher did for his master's degree--served as a summary of many of the concepts discussed to date.

At the beginning of the third session the group was divided into two groups--one to receive the treatment and the other to be taken to another part of the building for a placebo activity. The groups were randomly determined prior to class although the division during the class period had the appearance of being rather arbitrary. This was done to preserve the illusion that nothing unusual was going on so that a Hawthorne effect would not be established.*

The placebo activity was administered by a colleague in the Audiovisual Department. He demonstrated a Sony portable videotape unit and allowed the students to practice camera maneuvers such as pans, tilts, zooms and others. Finally the film, "Ducks," was screened and followed by a discussion. The placebo activity reinforced information both samples received during the first two sessions. It specifically avoided the planning

---

*People tend to do better when they know they are being observed or receiving a special treatment.

and editing stages with which the treatment dealt. This activity lasted the same length of time as the treatment.

The treatment was administered by the researcher in the regular classroom assigned for motion picture production and still photography classes (a large room with open spaces and movable tables). In short, it provided ample area for the various activities of the treatment.

Treatment

A sequence of simulation exercises that mirror the three stages of film making was administered during the evening. The three stages were (1) planning, (2) shooting and (3) editing.

Simulation was chosen from the repertoire of instructional technique because it afforded three definable opportunities that other approaches did not: (1) the master scene and related concepts involve the need for active behavior by the student rather than passive-receptive behavior; (2) simulation allowed the slow learners as well as the faster learners to become mentally as well as physically involved with the concepts of the master scene; and (3) simulation gave the effect of what was expected to appear in the students' productions. It bridged the gap between the passive learning needed to assimilate the concepts and principles of master scene technique and the physical involvement of actual film production.

The planning stage involved a short talk of how man's vision is psychologically motivated. This was to refresh the student's knowledge of information discussed during the first two sessions. The following condensation of the talk indicates its nature and scope.

A. Psychologically motivated vision is common to all sighted persons.
    1. Through the eye, the mind is engaged in a constant process of selectively widening and narrowing our visual attention.
    2. This process is affected by the individual's mind.
    3. It allows us to vary our visual attention from a wide perspective to the smallest detail within a field.
    4. We respond with a widened perspective when there is a need to understand the context of a visual situation. For example, when we enter a room for the first time we notice little of the fine detail. Later we selectively narrow the initial perspective as we become interested in the room detail and content.
    5. This pattern becomes automatic and subconscious.

B. The filmmaker simulates within the confines of his medium what we do with our eyes and brain.
   1. He uses his camera to record reality.
   2. Camera movements such as panning, tilting, trucking and zooming mimic human movements.

At this point, one of the students was asked to come to the front of the room and go through the actions of setting up and driving a golf ball. The class then engaged in a discussion of some of the more subtle, yet very important, details of driving the ball. During this discussion such aspects as placing the ball, gripping the club, addressing the ball, expression on the golfer's face, swing and stance were established. The first simulation experience was summed up by advocating the necessity of recording each of these subtle points when making a film of the golf swing.

The second simulation, or the shooting stage, also involved a short talk as well as a simulated activity. The talk covered this material:

A. There are basic perspectives for recording scenes.
   1. The long shot (LS) gives a relative overview of the subject.
   2. The medium shot (MS) captures the subject from an intermediate distance.
   3. The close-up (CU) offers a glimpse of detail.

B. Continuity principles are basic to the illusion of motion.

1. A motion picture is a series of stills with slight changes in each frame.
2. The illusion of motion is created because a good motion picture (more than a series of snapshots):
   a) hangs together,
   b) tells a story smoothly, coherently and logically.
3. Pictorial continuity is the proper development and connection of motion picture sequences to create a smooth, coherent story.

At this point, one student was given a camera and asked to assume that he was actually shooting footage of the golfer to make an effective visual statement of his swing. The remainder of the class observed and was asked for suggestions, alternate approaches and corrections. Instead of having the observing students verbalize their suggestions, they were given cameras and asked to demonstrate precisely what they meant. This exercise was used because it represented the real situation that they would encounter and should have provided the ground work for a positive transfer. The manipulation of the camera and their bodies should have been good

experience for actual shooting incidents in their own productions. The camera would be more familiar to them at that time.

C. A film segment of long shot perspective of a lady playing golf was shown and explained.
   1. It is boring and lacks visual impact. More footage is needed to emphasize expressions and actions.
   2. When planning an effective film, this might be used as a master scene into which you may cut more expressive shots from different perspectives.
   3. You need to shoot the action at least two more times from additional perspectives.

D. Action from MS and CU positions were shown.

E. From the footage you have just viewed, the filmmaker selected parts from all perspectives to make his visual statement.

The need for matched action and pictorial continuity was emphasized by the following statements and examples:

F. Because we have a record of the complete action from at least two perspectives, it is necessary to match the action when cutting, e.g., from LS to MS.

G. When editing a film, cutting means physically severing one section of film out of its place with scissors and splicing (glueing) it next to the desired preceding/following shot.

H. An example of correctly matched action was shown and an explanation of its correct execution was given.

The objective of a finished scene with visual impact was exemplified and explained with edited footage of the lady swinging the golf club. The edited version demonstrated the technique of matched action and the footage available from the master scene and other perspectives to show how a visually dynamic film can be constructed.

The third activity of the evening was a simulation of the editing process or the actual construction of a visual statement from available footage. The students constructed a sequence of shots with visual impact using a variety of perspectives (LS, MS, CU) incorporating matched action and using the simulated footage provided so that an explicit visual statement was communicated.

The simulated film consisted of three major strips of sketches that depicted in an abbreviated form a man catching and tossing a baseball. One strip showed the action in LS, another in MS and the third in CU.

An additional strip included two extreme close-up shots and some blank frames. The blanks could be drawn on with a pencil by the learner to embellish the simulated footage with additional shots of his choice. The strips looked like film in that they were (1) long and narrow, (2) had mock frames and sprocket holes and (3) depicted the progression of an action. Using scissors and tape provided, students were directed to make a visual statement by cutting and sequencing the strips of paper film as they wished. The completed simulations were evaluated in class with regard to the use of the three perspectives, pacing, sequence, matched action, and how well the final production communicated the idea attempted. (It should be noted that the evaluation of the edited strips was for the learner's benefit.) Although evaluation at this point was not directly related to the hypotheses proposed in the research, it was used in revising the simulation.

A discussion of the simulation strips is in Chapter IV, "Development of an Original Simulation." The simulation itself is located in Appendix D. Because of logistics, the simulation sketches have not been cut and made into strips for this paper.

The treatment group received a handout (Appendix A) with precise educational objectives for film making. This sheet, distributed at the end of the evening, summarized the planning, vocabulary, shooting and editing

aspects of film making. The students were told that if they had a good understanding of the content of the evening's presentation and understood the objectives as delineated on the handout, they were well-prepared to produce a film.

In the eighth week of the semester, a posttest (Appendix B) was administered to the entire class. This included students in the control group and in the treatment group. The results were analyzed for statistical significance as prescribed by H_1.

Film Evaluation Form

The two films that most of the students produced were evaluated using the evaluation form (Appendix C). The complexity of the film medium has been discussed above as well as the many aspects of film that can be appraised only by value judgments of the evaluator. That is, many aspects of film require subjective evaluation as opposed to measurement against objective criteria. Since film evaluation involved both subjective and objective appraisal, only the section on editing was statistically compared as prescribed by H_2. In this section, the terminal performance of the learner was evaluated against precise criteria. The following description of the components of the evaluation form includes a brief elaboration on what each item means.

The evaluation form was comprised of two major areas of evaluation with sub-topics under each. The two major areas are Content of Film and Technical Quality. Under Content of Film, concept, photography, editing, use of titles and graphics, and use of sound were considered. Under Technical Quality, lack of physical imperfections, sharpness, camera techniques, and titles and graphics were evaluated.

After each item on the evaluation form was a five-point scale. The key was: 1 - poor, 2 - below average, 3 - average, 4 - above average, and 5 - excellent.

The section on editing is described first. It is sub-divided into sequence, use of perspectives (LS, MS, CU, ECU), matched action and pacing. The grid in Appendix D defines the possible points, the aspect of editing under consideration and the terminal performance criterion in the appropriate intersecting grid.

The remaining items on the evaluation form concerned the film as a whole but were not directly related to the research. Some were evaluated against subjective criteria as explained above and others were evaluated against precise performance objectives. Since they concern this study only marginally, a brief elaboration on the meaning of the remaining items on the evaluation form follows:

Idea.--The suitability of the subject to filmic interpretation. Some subjects are communicated most efficiently by another medium and should not be interpreted by film.

Effectiveness of film.--Is the medium used to its full potential? The film vocabulary can convey precise meanings when used correctly.

Camera Technique.--Use of shots and techniques that are psychologically motivated. Examples include pans, zooms, tilts, etc.

Composition.--Effective arrangement of the subject matter in the rectangular format of the Super 8mm. film.

Use of titles and graphics.--The employment of a graphic when needed, e.g., a title and credit. They should, stylistically, suit the nature of the film. For example, a film on Japanese gardens should probably use a delicate, oriental style of lettering as opposed to Old English type.

Use of sound.--The use of narration, music and sound effects when needed to support the visual dimension of the film.

Lack of physical imperfections.--The lack of scratches, dirt, finger prints and like maladies on the surface of the film.

Sharpness-detail.--The ability of the filmmaker to focus the camera on the subject he is photographing.

Camera techniques.--The evident use of a tripod or a steady hand-held camera are simple techniques that help elevate many films to a position above amateur level. Also involved are smooth pans, zooms, dollies and tilts.

Titles and graphics.--The neatness and general appearance of graphic material.

The third hypothesis was tested by counting the number of master scenes in each of the student's films. No evaluation instrument other than a tally sheet was needed. A scene was designated a master scene if it included at least two perspectives of the subject with appropriate matched action cutting connecting them.

Limitations of the Study

The major limitation was the small size of the Fundamentals of Motion Picture Production class which was the population. The class, in turn, was small because of the limited supply of cameras and editing equipment available.

A second limitation was created by the narrowness of the population. In theory, the results are only generalizable to students taking the film production course at the University of Wisconsin - LaCrosse.

In addition, two design limitations were considered although it is unlikely that they affected the findings. Two areas of external validity that Campbell and Stanley termed questionable were (1) the checking of the interaction between the sample selection and the treatment and (2) reactive arrangement.[1] The reactive effects of experimental arrangements prevent generalization about the effect of the treatment upon individuals being exposed to it in nonexperimental settings.[2]

Statistical Design

The Posttest-Only Control Group Design as described by Campbell and Stanley was used. The design checked all eight sources of internal invalidity and the interaction effect of testing in the sources of external invalidity. Internal invalidity in the design was checked by eight classes of extraneous variables which may have produced effects compounded with the effect of the

---

[1]Donald T. Campbell et al., Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally and Co., 1966), p. 8.

[2]Ibid., p. 6.

treatment. The eight classes of variables were: history, maturation, testing, instrumentation, statistical regression, selection biases, experimental mortality, and selection-maturation interaction. Each variable is defined below followed by a statement of its relationship to this research.

(1) History.--Any events occuring after the administration of the treatment and before the three measurements.[3] If any events occurred they would have occurred to both the treatment and control groups so their effects would have been neutralized.

(2) Maturation.--The processes within the students operating as a function of the passage of time.[4] Both samples were influenced equally by the passage of the semester so the effect of maturation was not influencing just one sample.

(3) Testing.--The effects of one test on the scores of a second.[5] With this design no pretest was administered--only a posttest. The possible effect of testing was not applicable.

---

[3] Ibid., p. 5.

[4] Ibid.

[5] Ibid.

(4) Instrumentation.--The effects of changes in the calibration of a measuring instrument or changes in the scorers used may produce variations in the obtained measurements.[6] The posttest and the films were evaluated against objective criteria and by one evaluator so this source of invalidity was checked.

(5) Statistical regression.--Operates where groups were selected on the basis of extreme scores.[7] Statistical regression did not apply to this study because the samples were not selected on the basis of test scores but were randomly assigned from the population.

(6) Selection biases.--Differential selection of respondents for the comparison groups may result in biases.[8] Both the undergraduate and graduate students in AV323/523, Fundamentals of Motion Picture Production, were pooled and randomly assigned to the treatment and control groups so that selection biases were avoided. A stratified random sample, another option, was not used for two reasons--(1) both the undergraduate and graduate students knew little about film production and, in that sense, were equal and (2) three students were older,

---

[6]Ibid.

[7]Ibid.

[8]Ibid.

established members of the community and were taking the class for enrichment. They enrolled as undergraduates because it was less expensive. Yet these students fit more closely the description of a graduate student in that they were more mature, were established in a career or discipline and were pursuing additional education because of desire. Because these students were not typical undergraduate students and yet could not be classified as graduate students all members of the class were pooled and randomly appointed to one of two groups.

(7) Experimental mortality.--The differential loss of students in the samples.[9] The random distribution of the population checked this in that mortality should affect each group equally. The treatment group, however, experienced more mortality than the control group. No explanation is readily apparent.

(8) Selection-maturation interaction.--The experimental variable may be thought to create an effect when selection-maturation interaction was actually responsible.[10] This may happen in certain experimental designs when the comparison groups are nonequivalent. Again, the random assignment of the population into two groups of almost equal size checked this source of internal invalidity.

---

[9] Ibid.

[10] Ibid.

External validity involved the generalizability of the research to populations, settings, treatment variables and measurement variables. Both internal validity and external validity are important (even though they are frequently at odds in that features improving one may jeopardize the other).[11]

Four classes of variables are involved in external invalidity and relate to the representativeness of the study. The variables are: interaction of testing and the treatment, interaction of selection and treatment, reactive arrangements, and multiple treatment interference.

(1) Interaction of testing and the treatment.--A pretest might decrease the respondent's sensitivity to the treatment.[12] Since no pretest was administered this source of external invalidity was checked.

(2) Interaction of selection and treatment.--An interaction that may bias the experimental variable.[13] It is questionable as to whether this source of invalidity was checked.

---

[11] Ibid.

[12] Ibid.

[13] Ibid., p. 6.

(3) Reactive effects of experimental arrangements.--Would prevent the generalization about effects of the experimental treatment upon people being exposed to it in nonexperimental settings.[14] This source of invalidity is also questionable.

(4) Multiple-treatment interference.--Would likely occur whenever multiple treatments are administered to the same respondent.[15] Since only one treatment was administered, this source of external invalidity was checked.

According to Campbell and Stanley, the pretest is a concept deeply imbedded in the thinking of research workers in education and psychology, yet it is not essential to true experimental designs. It is difficult for researchers to give up "knowing for sure" that the experimental control groups were "equal" before the differential experimental treatment. However, the most adequate assurance of lack of initial biases between groups is randomization.[16] And, as was mentioned above, each member of the class was randomly assigned to one of the two groups.

---

[14] Ibid.

[15] Ibid.

[16] Ibid., p. 25.

A schematic of the design is:

R X O O O

R O O O

Methods of Analysis

A T-Test was used to test the statistical significance of the comparisons prescribed by the hypotheses. The T-Test was used because two sample means were compared for each hypothesis.

Statistical Hypotheses

Five statistical hypotheses were generated to test the effect of the treatment on a posttest and the editing of two films. The hypotheses are stated below in null form; each is accompanied by an alternative hypothesis.

Null Hypothesis$_1$:

No difference will be found between the mean scores on the posttest of the treatment group and the control group.

Symbolically: $\bar{u}_T = \bar{u}_C$

Alternate Hypothesis$_1$:

The students receiving the lecture and simulation exercises will have a higher mean score on the posttest than students in the control group.

Symbolically: $\bar{u}_T > \bar{u}_C$

Null Hypothesis$_2$:

No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the first film.

Symbolically: $\bar{u}_T = \bar{u}_C$

Alternate Hypothesis$_2$:

Subjects receiving the lecture simulation exercises will have a higher mean score in the editing section of the evaluation form than the subjects in the control group for the first film.

Symbolically: $\bar{u}_T > \bar{u}_C$

Null Hypothesis$_3$:

No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the second film.

Symbolically: $\bar{u}_T = \bar{u}_C$

Alternate Hypothesis$_3$:

Subjects receiving the lecture and simulation exercises will have a higher mean score in the editing section of the evaluation form than the subjects in the control group for the second film.

Symbolically: $\bar{u}_T > \bar{u}_C$

Null Hypothesis$_4$:

No difference will be found in the mean number of master scenes included in the first film between the treatment group and the control group.

Symbolically: $\bar{u}_T = \bar{u}_C$

Alternate Hypothesis$_4$:

Students receiving the lecture and simulation exercises will have a higher mean number of master scenes in their first film than the students in the control group.

Symbolically: $\bar{u}_T > \bar{u}_C$

Null Hypothesis$_5$:

No difference will be found in the mean number of master scenes included in the second film between the treatment group and the control group.

Symbolically: $\bar{u}_T = \bar{u}_C$

Alternate Hypothesis$_5$:

Students receiving the lecture and simulation exercises will have a higher mean number of master scenes in their second film than the students in the control group.

Symbolically: $\bar{u}_T > \bar{u}_C$

Instrumentation

Two instruments were constructed to gather the data for analysis. They were (1) the posttest administered in the eighth week of the semester and (2) the editing section of the film evaluation form. The posttest was subject to evaluation.

DeCecco stated that four concepts are used to evaluate fundamental test construction and use: "Validity is the degree to which a test actually measures terminal performances; reliability is the consistency with which a test measures these performances; objectivity is

freedom from subjective judgments in scoring of the test; and efficiency refers to the number of independent scorable responses per unit of time."[17]

Validity

A valid test engages students in the same performance required by the instructional objectives.[18] In a puristic sense, a written test is hardly the ideal way to measure a minimum standard of acceptable performance in the production of a master scene. Optimum performance is represented by proper planning, shooting and editing of a master scene with motion picture film. Performance was measured according to Hypotheses 2, 3, 4 and 5. However, a list of behavioral objectives given to students receiving the treatment specified recognition of concepts in a motion picture or simulation as well as performance objectives. The posttest measured the behavioral objectives that dealt with recognition.

Ideally, if the test was perfectly valid, every student receiving the behavioral objectives should have scored 100 per cent. If students received less than perfect scores, there is an evident need for further

---

[17]John P. DeCecco, The Psychology of Learning and Instruction: Educational Psychology (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1968), p. 618.

[18]Ibid., p. 613.

instruction. This reasoning contradicts the reliability factor described below which necessitates a distribution of scores. It can be stated here, however, that students receiving the treatment--and consequently the behavioral objectives--scored higher on the posttest than the students who did not receive the objectives. The scores of the treatment group, then, were more valid because they were closer to a minimal standard of acceptable performance.

Reliability

A test is reliable if it measures terminal performances consistently. In other words, a student is expected to obtain the same score on the second administration of the test as he did on the first.[19] Since this is often an impossible situation, test reliability can be determined by item analysis.

Item analysis was used to measure the level of item discrimination and difficulty. Item discrimination is an index (a decimal fraction) dependent upon the degree to which a test item distinguishes between the high and low scores. Item difficulty (a percentage) is influenced by the percentage of the students who answer the item correctly.[20]

---

[19]Ibid., p. 615.

[20]Ibid., p. 642.

A BASIC item analysis program was run to determine the difficulty and discrimination index of the post-test. To compute this item analysis, the following procedures were followed.

(1) The tests were arranged in order of scores from high to low.

(2) A group of high scores was formed by separating the upper 27 per cent of the papers--a total of six.

(3) A group of low scores was separated out--again 27 per cent or a total of six.

(4) On consecutive data lines, the number of correct responses for the high group and the low group for each item were entered. The item analysis appears in Appendix E.

DeCecco stated the closer the difficulty index is to 50 per cent the more reliable the test is.[21] The average difficulty was .74--a percentage that is higher than perfect reliability but not excessive (100% would indicate no discrimination). It must be recalled here that two major factors have influenced the findings. (1) The sample size was very small for precise statistical interpretation. The problems in the statistics

---

[21]Ibid., p. 643.

texts employed examples with several hundred test scores--very different from the twenty-five scores used in this experiment. (2) If the test were perfectly valid, the average difficulty would be one. The .74 figure reflected both a test that had item discrimination as well as the influence of behavioral objectives.

DeCecco also stated that the closer the discrimination index is to 0.40 and above the better the reliability. While individual item discrimination indices varied, the average index was .39--a decimal fraction very close to ideal. Again, the fluctuation on individual item indexes was attributable to the very small number of people in the sample. The item analysis is in Appendix E.

Objectivity

A test is objective if it was scored free of subjective judgments and if a colleague in the discipline would obtain a perfect or almost perfect score.[22] The test was designed and scored so that only one item option per question was correct. The posttest was administered to a colleague who received his undergraduate degree in film production, and was evaluated as the tests in the samples were scored. He answered every item correctly. He included two additional responses under "matched action" which were subjective choices. Although these

---

[22]Ibid., pp. 616, 641.

responses were less correct than the other responses, he was justified in questioning their exclusion. The post-tests were re-evaluated but no one in the samples chose either of the two marginal responses. The issue was not pursued because it had no effect on the results of this study.

Efficiency

Efficiency was the last consideration regarding the performance assessment of the posttest. An efficient test yields a large number of scorable responses within a unit of time.[23] Fifty-seven responses were evaluated with an approximate testing time of twenty-five minutes. It took the colleague approximately fifteen minutes to complete the exam.

Summary of Posttest Assessments

In summary, four assessments were employed to evaluate the posttest. They dealt with (1) validity, (2) reliability, (3) objectivity, and (4) efficiency. The posttest was valid in that it measured the behavioral objectives given the treatment group. Item analysis was used to measure reliability. The posttest had an average difficulty of .74 and an average discrimination index of .39. The small sample size as well as the uneven attrition in the samples detracted from the

---

[23]Ibid., p. 617.

desired degree of accuracy but the indices obtained were respectable. The test was scored free from subjective judgments and was administered to a colleague. His perfect score reinforced the objectivity of the test. Finally, the test was efficient in that fifty-seven responses per person were generated in approximately twenty-five minutes.

Film Evaluation Form

The film evaluation form (Appendix C) was the other instrument used to record data. Unlike the post-test, this device was designed to assess performance in films the students produced. While mathematical indices described above for test reliability are not applicable, a verbal assessment can be made using the same categories of validity, reliability, objectivity and efficiency.

The editing section of the evaluation form was valid in that numerical ratings were assigned according to performance criteria (Appendix D). A copy of these performance criteria was before the researcher during the film evaluation process and referred to for each item during perusal of each film. It must be recalled that there is a degree of subjectivity to film evaluation, but by this constant referral to the performance criteria it was made as objective and consistent as possible from one film to the next.

Reliability for this instrument was checked by its consistency of measuring terminal performances. All films were evaluated by the researcher twice with the second evaluation following the first, in most instances, by six weeks. Only three film scores were changed after the second viewing. One film, made by a student in the control group, was evaluated one point higher. Two other films, produced by students in the treatment group, were lowered in score. (One was reduced by three points and the other by two points.)

The films were evaluated as free from subjective judgments as possible considering the great diversity of potential topics and treatments. As mentioned above--a copy of the performance criteria was before the evaluator and was referred to at each decision point. Also, most films were evaluated without knowledge of whether the student was in the control or treatment group. On some occasions circumstances and/or memory revealed the group status of the student.

One evaluator scored the films for several reasons.

(1) For many, film is a very subjective medium. A potential evaluator may not want to give up his repertoire of subjective experiences and conform to the objective criteria defined for this study.

(2) The researcher did not want to chance a Hawthorne effect by retaining the films beyond a normal

evaluation period. Since this class is offered every semester, the operational procedures could be common knowledge among the students.

(3) There was only one other potential evaluator on the faculty at the University of Wisconsin - LaCrosse and he administered the placebo activity to the control group. It is possible he could bias the scoring.

The evaluation form was efficient in that each film was scored on a 20-point range and over four categories. The five-point scale for each category provided a quick and uncomplicated method of assessment.

CHAPTER IV

DEVELOPMENT OF AN ORIGINAL SIMULATION

The model proposed by Crawford and Twelker was used as a guide for the development of the simulation used in the experiment. The model contains thirteen steps which are categorized as follows:

(1) Delineating what is to be taught
(2) Determining the best approach to teaching it
(3) Validating the method.[1]

The model is shown in Figure 1.

System Analysis

Step 1. Define Instructional Problems[2]

As reported in Chapter I, students taking AV323/523, Fundamentals of Motion Picture Production, at the

---

[1]Jack Crawford and Paul A. Twelker, "Affect Through Simulation: The Gamesman Technologist," The Affective Domain A Resource Book for Media Specialists (Washington, D.C.: Communication Service Corporation, 1970), p. 161.

[2]Ibid., p. 163. The descriptive headings for the development of the simulation are quoted directly from Crawford and Twelker, pp. 163-69. Quotation marks are not used for style consistency.

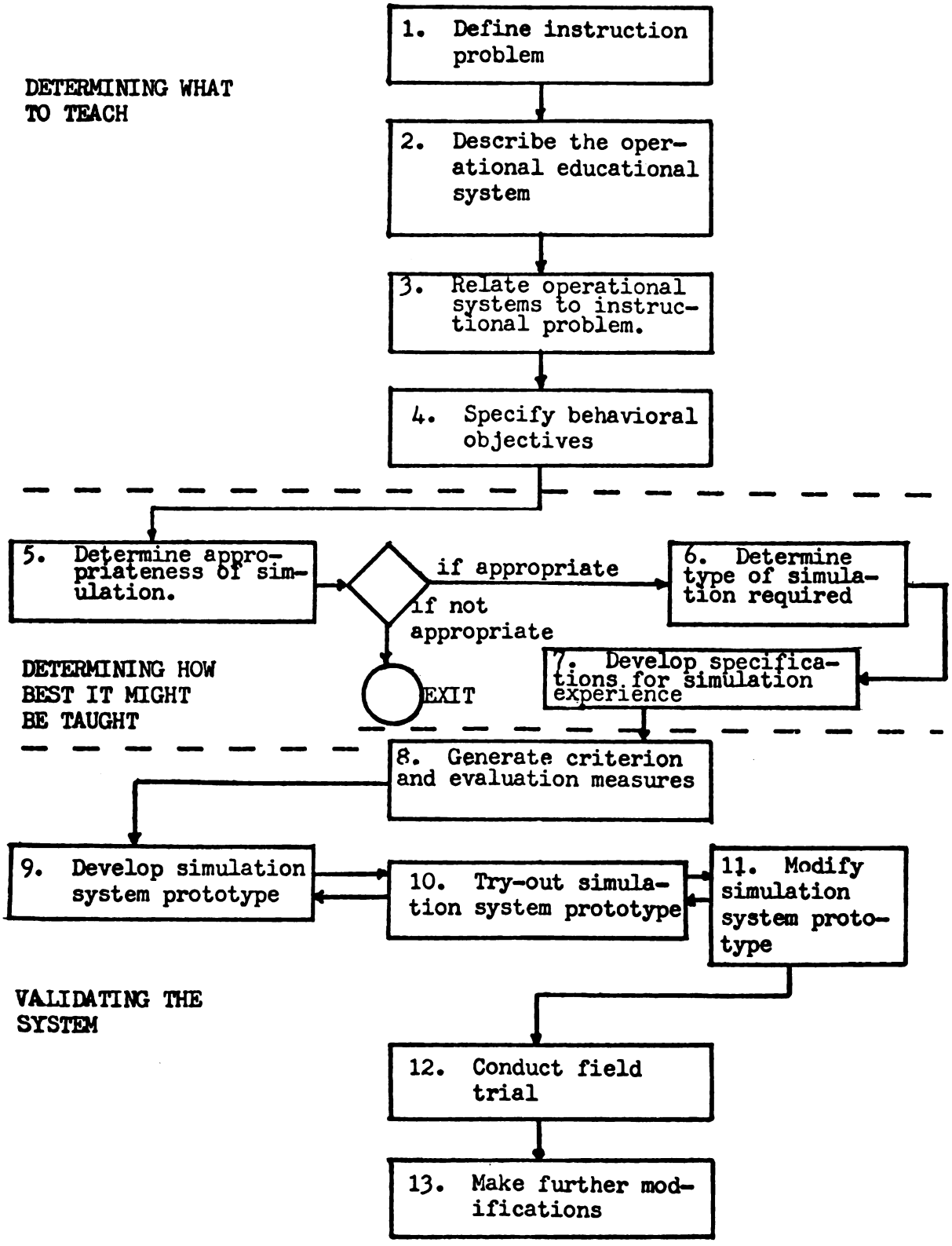


Fig. 1.--Steps in the design of an instructional simulation system.

University of Wisconsin - LaCrosse have failed to learn and have been unable to apply the master scene concept when producing films. As a result, their productions have often been little better than amateur.

The use of the lecture to present information about the master scene has produced unsatisfactory results over the duration of several semesters. Many students comprehended the information but failed to apply it and others simply did not bother to see the relationship between this type of lecture material and their own productions. The idea of the simulation came about as a possible link between classroom theory and the reality of making a film. The simulation would closely represent the actual physical and mental steps involved.

Step 2. Describe the Operational Educational System

An analysis of the operational system is presented in the section "Procedures," in Chapter III. Included in the analysis were the target group, support equipment, available materials and facilities.

As best can be determined all elements of the problem in conjunction with the characteristics of the department, the institution, the course and the students have been considered. And, as is mentioned below, an expert in the use of simulations offered suggestions on the treatment.

Step 3. Relate the Operational System to the Problem

The aspects of the instructional system mentioned in Step 2 are related to the instructional problems underlying the purpose of this research. Through revisions, the essence of the problem was refined and isolated so that an experimental situation could be designed and tested in a rigorous research setting.

System Design

Step 4. Specify Objectives in Behavioral Terms

The objectives for the three phases of the simulation are in Appendix A. From these specific terminal behaviors came the impetus for using the simulation exercises.

Step 5. Determine Appropriateness of Simulation or Gaming

Because of the additional cost and complexity of a simulation over a more conventional method of instruction, Crawford and Twelker offered seven possibilities in which the simulation might afford a useful alternative or a marked advantage. Each of the seven points has relevance to the simulation developed for this experiment although some are more relevant than others. The seven points are listed below; each is discussed briefly.

"1. An emphasis upon emotional or attitudinal outcome."[3] The Fundamentals of Motion Picture Production course involved production activities rather than the more passive activities of listening and viewing. That is, the students had the opportunity to be makers of film rather than mere consumers as is the case in most film appreciation courses. However, the students were placed in a passive role until they were sufficiently versed in fundamental techniques of film production. It was possible that a pattern was established that was difficult to break away from--i.e., from being a passive consumer of information to a filmmaker. The simulation experience bridged this period of the course. The simulation exercises enhanced students' emotional involvement in production before they made their own films.

"2. The combination of affective and cognitive behavior--planned integration of feeling and thought--can be affected by simulation over a range limited only by concerns of practicability."[4] This is particularly relevant to the field of motion picture production. It is a medium that marries both the cognitive and affective domains. Motion picture production is based on basic concepts that are employed as building blocks by the filmmaker. For these, very precise educational

---

[3]Ibid., p. 164.

[4]Ibid.

objectives can be written and objective tests constructed to determine the filmmaker's degree of comprehension. But also involved are the creative ability of the filmmaker and his ability to see a new synthesis of reality. The simulation exercise allowed the filmmaker the flexibility to re-structure the simulated footage according to established objective principles while expressing his interpretation of the subject.

"3. Motivation to initiate a sustained learner activity--a universal observation of simulation is the high interest and involvement engendered, which alone may justify the development of simulation within an instructional program."[5] The type of simulation employed in this research did not involve interaction between several individuals. It involved the prospective filmmaker in interaction with editing alternatives on an individual basis. However, if this approach proved to be successful, more simulation activities could be developed to supplement the prototype designed for this research. Given this flexibility, the prospective filmmaker would be able to choose simulated films to edit that appealed to him from among several alternatives. Or, with the successful completion of one simulation, he would be able to try another that involved a more complex treatment. It would

---

[5]Ibid., p. 165.

even be possible for the filmmaker to use the same simulation situation (i.e., request a new set of LS, MS, CU paper strips) and re-edit them using a different approach. (See "Implications for Future Research" in Chapter VI.)

"4. Emphasis upon the learner interacting with a complex and reactive environment--so that he can discover the effects of alternative decisions."[6] By attempting and perhaps reattempting the simulation activity, the learner would be able to see the effects of alternative decisions. Also, since the simulation activity was done in a classroom situation with several other students, each participant was able to see how his peers had edited identical simulated footage.

"5. Emphasis upon incorporation of the behavior within the personal domain of the learner--here the learner makes the concept, principle or value learned 'part of himself.'"[7] It is possible that the interjection of a new array of implements (i.e., camera, tripod, and film cartridge with the accompanying attention to detail that each commands) interfered with the positive transfer of learning from classroom to production. The learner appeared to grasp various concepts at the verbal level but failed to transfer them to physical representations. The simulation activity bridged verbal and

---

[6]Ibid.

[7]Ibid.

physical levels without interjecting the complications of equipment during the learner's first attempt to visualize these concepts and principles.

"6. The application of behavior, particularly under a variety of contexts--simulations and games may be designed so that the learner can continue to function appropriately in a more and more complex environment."[8] The rationale for this notion has been elaborated in both Steps 3 and 4 above. If the original simulation activity was proven to be successful, numerous variations may be produced to add complexity to the activity. The learner would thereby be provided with as many challenging situations as were needed before transferring to actual film making.

"7. Emphasis upon a 'perceptual frame' to sensitize and direct the learner--putting the learner in a desired 'set' to shape the pattern of his selections of input and output."[9] The tested simulation was designed to meet this standard precisely. The learner was provided with materials, instructions, and a familiar location. To render the situation less threatening, he was provided with tools that were also familiar. These tools represented the more esoteric implements of film editing that he was yet unskilled in operating. For example, scissors

---

[8]Ibid.

[9]Ibid.

and tape substituted for the splicer and film cement; paper strips were used instead of film; and large opaque images avoided the need for viewing and projecting equipment.

Step 6. Determine Type of Simulation or Game Required

Crawford and Twelker refer to three board categories of simulation activities. While these categories are not necessarily all-inclusive, they are considered to be representative. They are Media-Ascendant simulation, Interpersonal Ascendant Simulation and Non-Simulation Games.[10]

The category most appropriate for this research was the Media-Ascendant Simulation which includes such examples as classroom simulation, simulator trainers, simulation of dental emergencies and one-man computer games. This category may involve components such as simulation, gaming and role-playing.[11] The exercises used in this experiment involved simulation (editing paper strips to simulate film) and role-playing (the learner played the role of planner, cinematographer and editor). No aspect of gaming was involved.

Crawford and Twelker also report that individuals involved with media-ascendant simulation have the amazing

---

[10] Ibid., p. 139.

[11] Ibid., p. 140.

capacity to "throw themselves into the situation."[12] Even though the learner realized that the simulation was not reality, he behaved as though it were real life.

Step 7. Develop Specifications for the Instructional System

Crawford and Twelker stated:

> In this step, the designer should rely on the most relevant principles of instruction, the best judgment he can bring to bear in the problem, and the tactics that are suggested by the analysis of the learning objectives mentioned in Step 4 as he builds the simulation or gaming system. It should be stressed that the design of a simulation game is still an art or craft, and many decisions that a designer has to make cannot be based on empirical evidence, much less a unified theory.[13]

The need for the study provided the design impetus of the simulation exercises. The representation of actual film making techniques in conjunction with precise behavioral objectives in themselves dictated the system design. This coupled with the System Validation outlined below determined the development of the instructional system.

An expert in the design and use of simulation who is a member of the faculty at the University of Wisconsin - LaCrosse was also consulted.* He listened to the researcher's explanation of the purpose and examined the

---

[12] Ibid., p. 151.

[13] Ibid., p. 166.

*Dr. Richard Schoenberger

prototype. He said that it should be suitable for the purposes of the research. Additional references were also recommended (some of which are in the bibliography of this paper).

System Validation

Step 8. Generate Criterion and Evaluation Instruments

Two types of instruments needed to be generated in this step. First, a measuring device was developed for assessing whether the learner attained the desired terminal behaviors stated in the objectives.[14] This told whether the learning situation or the simulation was successful. The other type of instrument was to assist the designer in making subsequent revisions in the system.

Two instruments or measuring devices were developed to collect data to test the first three hypotheses. They concerned the assessment of the learner's terminal behaviors. The first--a posttest reproduced in Appendix B--was written from the educational objectives stated in Step 4 above; the posttest incorporated many aspects of the simulation experiences. The second was the section on editing included in the film evaluation form. This section was designed to be evaluated against criteria that were more objective than subjective whereas many aspects of the film evaluation form

---

[14] Ibid.

rel

It

a s

an

For

(Th

and

Pro

rev

by

eva

cip

Ste
Or

typ

duc

but

dep

ima

rely on only the subjective judgment of the evaluator. It should also be recalled that film, like the design of a simulation, is an art or craft and many observations an evaluator makes cannot be based on empirical evidence. For this reason, only the section on editing was tested. (The film evaluation form is reproduced in Appendix C and an elaboration of its points is in the section on Procedures in Chapter III.)

The second instrument used to indicate needed revision was the edited simulation exercise completed by each learner receiving the treatment. These were evaluated according to the following concepts and principles elaborated in Step 4:

(a) the progression of the action;

(b) the use of LS, MS, CU;

(c) matched action; and

(d) use of cut-aways and cut-ins.

Step 9. Develop the Simulation or Game System Prototype

Various alternatives were presented at the prototype development stage. The primary problem was to reproduce on paper (with an image large enough to distinguish but small enough to be manageable) a series of stills depicting the progression of an action.

The first attempt to provide a sequence of images was photographic in nature. A Polaroid rapid

se

of

of

ex

ph

pr

te

fr

th

be

le

of

sm

wa

fo

35

sh

an

th

wo

ex

wa

cl

ab

sequence camera was obtained and tested. This camera is often used by athletic coaches to check the progression of bodily movements during a physical activity. For example, a baseball coach can record a batter's form by photographing him as he swings at a ball. The camera provided a 4- by 5-inch print that was subdivided into ten sequential shots--one following the other by a fraction of one second. This camera was adjustable in that the interval between each shot in the sequence could be varied. However, the slowest interval was still much less than one second and was the most serious limitation of the camera. A second limitation was the relatively small image size. In short, while the sequential camera was superb for a simulated film, it was deemed unsuitable for the development of the prototype.

A second alternative was the use of a motorized 35 mm. camera. A motorized Nikon which, in theory, should have provided a sequence of stills representing an action was available for use in this experiment. If this approach had been used, strips of contact prints would have been given to the learner for the simulation exercise. After examining several contact sheets, it was decided that the image was too small and often cluttered with nonessential background.

A third alternative nearly identical to the one above, the use of a motorized Hasselblad, was contemplated.

This would have provided a 2 1/4-inch square negative of suitable size for the simulation activity. However, this camera is extremely expensive and rare. An attempt to locate one for use in this study was unsuccessful.

A fourth alternative involved the freehand drawing of the sequence of an action. However, because of the precision and time required, the graphic artist who was contacted refused to accept this assignment.

The fifth alternative was selected for its simplicity and ease of creation. Two plates of sequential photographs by Eadweard Muybridge were enlarged, via a photomodifier, to make the simulated motion picture film. Muybridge was a turn of the century photographer who experimented with sequence photography.[15] He set up and aligned many cameras so that the shutters would be released at desired intervals. He photographed men, women, athletes and animals engaged in numerous activities. His resulting sequences of photographs detailed the anatomical features of varying subjects at all stages of their respective activities.

The sequence of photographs printed in the plates were reproduced in three different enlargements. The three enlargements represented the LS, MS, and CU perspectives. Selected frames enlarged to an even greater

---

[15]Eadweard Muybridge, Human Figure in Motion (New York: Dover Publications, Inc., 1955), plates 47 and 44.

degree represented the extreme close-up shot. The series resembled a condensed version of a motion picture sequence which, in reality, was nothing more than a series of still photographs.

Step 10. Try Out the System Prototype

The simulation was tried out twice before the research started. It was first administered to half of the students in the course, Fundamentals of Motion Picture Production, in January, 1973. At that time precise instructional objectives had not been specified so there was no statistical validation of its merit. The simulation activity, however, did not pose any procedural problems.

Step 11. Modify the System Prototype

Crawford and Twelker suggested that three major decisions are pending at this step.

1. If the system seems appropriate for obtaining the stated objectives how can it be improved?
2. If the system does not seem appropriate for obtaining the stated objectives, how can it be changed?
3. If the system does not seem to be appropriate for obtaining the stated objectives, should it be discarded in favor of other types of systems?[16]

At this stage, the instructional experiences were deemed appropriate. Some of the students who

---

[16]Ibid., p. 168.

r

w

t

w

s

i

S

e

o

a

a

m

S

d

"

q

a

t

s

received the treatment were asked in casual conversation what they thought of the simulation activity. Although this evidence is limited, in every instance the response was favorable. One graduate student commented that the simulation activity brought everything together so that it made sense.

Step 12. Conduct Field Trial

The simulation activity was administered to the entire 1973 summer session class. Precise instructional objectives as well as a posttest were developed and used at that time. Again, the students found it easy to accept the simulation activity as representative of film making.

Step 13. Make Further Modifications to the System Deemed Appropriate from Field Trial Evidence

The simulation activity proved to be successful during the field trial. The small summer session class "edited" visually explicit simulated films. Some questions on the posttest were deemed confusing or ambiguous so revisions were made. As with the group that experienced the prototype try-out, the field trial students felt positively about the simulation activity.

Summary

The model proposed by Crawford and Twelker as a guide for the development of a simulation was used in creating the simulation for this experiment. The process involved thirteen steps that: (1) delineated what was to be taught, (2) determined the best approach to teaching it, and (3) validated the method.

CHAPTER V

ANALYSIS OF RESULTS

The major findings of the study are summarized in this chapter. Each hypothesis is restated below and followed by a probability statement. Indication is made as to whether the hypothesis was rejected or accepted. Interpretation of the data will follow in the section labeled "Discussion."

As reported in Chapter III the students in the class were randomly assigned to one of two groups of almost equal size. The number in each group decreased during the course of the experiment for a variety of reasons including the dropping of the class by two students and by requests from five students for incompletes. Reasons for requesting incompletes varied from occupational pressures to sickness in the family and are detailed below.

Null Hypotheses Tested and Results

The five null hypotheses are restated below followed by the statistical analysis. Tables summarizing data are used where applicable.

The first null hypothesis tested in the study was:

H_o1:

No difference will be found between the mean scores on the posttest of the treatment group and the control group.

Twelve students in the treatment group and thirteen students in the control group took the posttest. Since this was the first measurement attained, the two groups were at maximum size.

A t ratio was the test of statistical significance used because only two sample means were compared. These scores are reported in Tables 5.1 and 5.2. The mean of the treatment group was 46.5 and the mean of the control group was 40.54. The null hypothesis was rejected. The probability of T = -1.74 with 23 degrees of freedom was within the .05 confidence interval. Table 5.3 summarizes these findings.

TABLE 5.1.--Summary of posttest scores and rank of treatment group

Student	Posttest Score	Rank Within Group
1.	51	5
2.	51	6
3.	31	12
4.	53	4
5.	36	10
6.	44	9
7.	54	2
8.	46	8
9.	55	1
10.	34	11
11.	53	3
12.	50	7

TABLE 5.2.--Summary of posttest scores and rank of control group

Student	Posttest Score	Rank Within Group
1.	34	11
2.	53	2
3.	42	7
4.	35	9
5.	42	6
6.	43	5
7.	31	12
8.	44	4
9.	52	3
10.	54	1
11.	38	8
12.	29	13
13.	30	10

TABLE 5.3.--T-Test for statistical significance between the mean scores for H_o1

Sample	Sample Size	Mean	Standard Deviation
Control group	13	40.54	8.68
Treatment group	12	46.5	8.42

Note: The students' T value is -1.74255 at 23 degrees of freedom. Probability of T> = to -1.74255 with 23 degrees of freedom is within the .05 confidence interval.

The second hypothesis tested was:

$H_o 2$:

No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the first film.

Tables 5.4 and 5.5 summarize the numerical evaluation of each film. Although the total score for the editing section was the only score used for analysis, the individual tallies for the four concepts on the form are listed. The concepts evaluated, each on a five-point scale, were Sequence, Use of Perspectives, Matched Action and Pacing. The number of master scenes was included in these tables and are referred to in Hypotheses 4 and 5.

TABLE 5.4.--Summary of editing scores on the first film for the treatment

Student	Sequence	Use of Perspectives	Matched Action	Pacing	Total Editing Score	Number of Master Scenes
1.	4	3	3	3	13	2
2.	4	4	4	5	17	2
3.	4	5	5	5	19	5
4.	3	2	3	4	12	0
5.						
6.	5	5	5	5	20	4
7.	5	5	5	5	20	4
8.	3	3	3	4	13	1
9.	3	4	3	4	14	0
10.	4	4	5	4	17	5
11.	4	4	4	4	16	3
12.						

TABLE 5.5.--Summary of editing scores on the first film for the control group

Student	Sequence	Use of Perspectives	Matched Action	Pacing	Total Editing Score	Number of Master Scenes
1.	4	5	4	4	17	4
2.	2	2	2	4	10	0
3.	4	5	4	4	17	1
4.	3	2	1	4	10	0
5.	4	5	4	3	16	1
6.	3	3	3	2	11	0
7.	3	3	2	3	11	0
8.	2	2	2	3	9	0
9.	1	2	1	3	7	0
10.	2	2	2	2	8	0
11.	4	3	3	4	14	0
12.	3	3	2	3	11	0
13.						

Some attrition had occurred by this stage of the data collection. Ten students completed the first film in the treatment group and twelve students remained in the control group.

The t ratio was used to test the statistical significance between the difference in the mean scores. The mean of the treatment group was 16.1 and the mean of the control group was 11.75. The null hypothesis was rejected. The probability of T> = -3.18 with 20 degrees of freedom was within the .005 confidence interval.

Table 5.6 summarizes these findings.

TABLE 5.6.--T-Test for statistical significance between the mean scores for H_o2

Sample	Sample Size	Mean	Standard Deviation
Control group	12	11.75	3.44
Treatment group	10	16.1	2.998

Note: The students' T value is -3.18 at 20 degrees of freedom. Probability of T> = -3.16782 with 20 degrees of freedom is within the .005 confidence interval.

The third hypothesis was:

H_o3:

No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the second film.

The same circumstances mentioned above for Hypothesis 2 apply to Hypothesis 3. The scores of both the treatment group and the control group are reported in Tables 5.7 and 5.8 respectively. Additional attrition is evident. The second film was completed by seven students in the treatment group and by ten students in the control group.

The t ratio was used to test the statistical significance between the difference in the mean scores. The mean of the treatment group was 14.5 and the mean of the control group was 9.2. The null hypothesis was rejected. The probability of T> = to -3.82 with

TABLE 5.7.--Summary of editing scores on the second film for the treatment group

Student	Sequence	Use of Perspectives	Matched Action	Pacing	Total Editing Score	Number of Master Scenes
1.	4	3	3	4	14	2
2.	4	4	4	5	17	2
3.	4	4	3	3	14	4
4.						
5.						
6.						
7.	5	5	5	5	20	14
8.	3	2	2	4	11	1
9.	4	3	3	4	14	0
10.	3	3	2	3	11	1
11.	4	3	4	4	15	1
12.						

TABLE 5.8.--Summary of editing scores on the second film for the control group

Student	Sequence	Use of Perspectives	Matched Action	Pacing	Total Editing Score	Number of Master Scenes
1.	3	4	2	3	12	3
2.	2	1	1	2	6	0
3.	3	3	2	2	10	2
4.						
5.	2	2	2	2	8	1
6.	3	2	1	3	9	0
7.						
8.	4	2	1	4	11	0
9.	4	3	3	4	14	2
10.	3	2	2	2	9	0
11.	3	1	1	4	9	0
12.	1	1	1	1	4	0
13.						

16 degrees of freedom was significant within the .001 confidence interval. Table 5.9 summarizes these findings.

TABLE 5.9.--T-Test for statistical significance between the mean scores for $H_0 3$

Sample	Sample Size	Mean	Standard Deviation
Control group	10	9.2	2.86
Treatment group	8	14.5	2.97

Note: The students' T value is -3.82 at 16 degrees of freedom. Probability of T> = to -3.82 with 16 degrees of freedom is within the .001 confidence interval.

The fourth hypothesis was:

$H_o 4$:

No difference will be found in the mean number of master scenes included in the first film between the treatment group and the control group.

The tabulation of the number of master scenes in each group is reported in Tables 5.4 and 5.5. As with the previous hypotheses the t ratio was used to test the statistical significance between the difference in the mean scores. The mean of the treatment group was 2.6 and the mean of the control group was .58. The null hypothesis was rejected. The probability of T> = to -2.97 with 20 degrees of freedom was significant within the .005 confidence interval. Table 5.10 summarizes these findings.

TABLE 5.10.--T-Test for statistical significance between the mean scores for H_o4

Sample	Sample Size	Mean	Standard Deviation
Control group	12	.58	1.16
Treatment group	10	2.6	1.89

Note: The students' T value is -2.97 at 20 degrees of freedom. Probability of T> = to -2.97 with 20 degrees of freedom is within the .005 confidence interval.

The fifth hypothesis was:

H_o5:

No difference will be found in the mean number of master scenes included in the second film between the treatment group and control group.

Tables 5.7 and 5.8 include the tabulation of the number of master scenes for the second film for the treatment group and control group, respectively. The t ratio was again used to test the statistical significance between the difference in the mean scores. The mean of the treatment group was 3.12 and the mean of the control group was .8. The null hypothesis was not rejected. The probability of T> = to -1.50 with 16 degrees of freedom was not statistically significant at the .05 confidence interval--the maximum interval at which a null hypothesis may be rejected. An interval extending beyond .05, such as .10, is not considered

statistically significant because the false rejection of the null hypothesis due to chance is too great. Table 5.11 summarizes these findings.

TABLE 5.11.--T-Test for statistical significance between the mean scores for H_o5

Sample	Sample Size	Mean	Standard Deviation
Control group	10	.8	1.13
Treatment group	8	3.12	4.55

Note: The students' T value is -1.50 at 16 degrees of freedom. Probability of T> = to -1.41079 with 16 degrees of freedom was not significant within the .05 confidence interval.

Discussion

Four of the five null hypotheses were rejected which showed that the treatment significantly affected students receiving it. They scored higher on the post-test and on the evaluation form used to evaluate their films. This indicated they were better prepared to identify on a posttest and apply to the editing of two films the concepts specified by the behavioral objectives.

Null Hypothesis 1[1] was rejected which indicated that, at a cognitive level, the combination of precise behavioral objectives in conjunction with the treatment

---

[1] H_o1: No difference will be found between the mean scores on the posttest of the treatment group and the control group.

was a better approach to teaching the master scene and related concepts than the traditional lecture. Circumstances were optimum, within the limitations of the study and sample size, for the testing of H_o1. There were more students in each group at this stage which ensured more random equality for the two groups. These findings, and the findings for the other hypotheses tested, are directly generalizable to the population from which the samples were drawn--i.e., to University of Wisconsin - LaCrosse students enrolled in Fundamentals of Motion Picture Production.

Null Hypotheses 2 and 4 were both rejected. At the time for data to be collected to test H_o2 and H_o4 three people had withdrawn from the class. One was in the control group and two were in the treatment group.

With reference to Hypothesis 2,[2] the simulation treatment caused students receiving the treatment to produce films that employed better use of: sequence, perspectives, matched action and pacing (all integrally related to the master scene concept of film making). Because students receiving the treatment included more master scenes in their first film production,

---

[2] H_o2: No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the first film.

Hypothesis 4[3] was rejected. This was a desirable result because the master scene approach provided the filmmaker with greater visual potential when editing the film.

Null Hypothesis 3[4] was rejected. The simulation treatment caused students receiving the treatment to produce films which received higher scores in the editing section of the film evaluation form. As was stated with reference to null Hypothesis 2, these films employed better use of: sequence, perspectives, matched action and pacing.

Hypothesis 5[5] was not rejected. An interesting paradox was evident here. The reason the null hypothesis was not rejected was because of the very high standard deviation of the treatment group. Student number seven, alone, was responsible for the excessive standard deviation. He produced an animated film far beyond what was expected of students in this class. He visualized, with

---

[3] H_o4: No difference will be found in the mean number of master scenes included in the first film between the treatment group and the control group.

[4] H_o3: No difference will be found between the mean scores of the treatment and the control groups in the editing section of the evaluation form for the second film.

[5] H_o5: No difference will be found in the mean number of master scenes included in the second film between the treatment group and control group.

plastic toy figures, an old Lone Ranger radio story. He estimated that he and his wife worked seventy hours on the shooting and editing. He included an unprecedented fourteen master scenes in his film. This excessive raw score deviated significantly from the mean of the group and resulted in failure to reject the null hypothesis.

To see if null Hypothesis 5 would have been rejected if student number seven had produced a film with fewer master scenes, another t ratio was computed with all data identical to that used to test Hypothesis 5 except four master scenes were substituted for the fourteen that student number seven actually produced. This reduced the standard deviation for the treatment group to 1.53. Under these circumstances the null hypothesis would then have been rejected at the .05 confidence interval.

At the time data were collected to test Hypothesis 2 the semester had waned. Additional attrition was evident in that only ten students remained in the control group and eight in the treatment group.

Various reasons were probably responsible for the decline in numbers. First, the Fundamentals of Motion Picture Production class involved a great deal of student effort. And, this effort had to be expended at very specific times throughout the semester in order to complete the requirements for the course. For

example, the film had to be planned early enough to arrange for any special shooting requirements. A specific weather condition or certain people or props that take time to schedule may have been needed. Another factor inherent in filming, that needed to be included in the time budget, was the time required to have film processed and returned. It was usually necessary to allow adequate time to reshoot if some footage was unacceptable because of technical reasons, content or other.

The wise student scheduled his time so he was able to counter the problems involved. If he did not, he was likely to have insufficient time at the end of the semester to complete the film. Some of the students had legitimate excuses for not completing their second film and were given incompletes according to University policy. Tables 5.12 and 5.13 summarize the test and films completed by each student in the treatment and control groups respectively.

Five students did not complete the course requirements in the treatment group. Student number four was a foreign student from Hong Kong. At the end of the semester his uncle, living in New York City, was injured in an automobile accident. Since the student was the nearest male relative, according to Chinese custom, he left school to be with him.

TABLE 5.12.--The students assigned to the treatment group and the test and films each completed

Student	Posttest	First Film	Second Film	Completed Course
1.	YES	YES	YES	YES
2.	YES	YES	YES	YES
3.	YES	YES	YES	YES
4.	YES	YES	NO	NO
5.	YES	NO	NO	NO
6.	YES	YES	NO	NO
7.	YES	YES	YES	YES
8.	YES	YES	YES	YES
9.	YES	YES	YES	YES
10.	YES	YES	YES	YES
11.	YES	YES	YES	YES
12.	YES	NO	NO	NO
Total	12	10	8	8

TABLE 5.13.--The students assigned to the control group and the test and films each completed

Student	Posttest	First Film	Second Film	Completed Course
1.	YES	YES	YES	YES
2.	YES	YES	YES	YES
3.	YES	YES	YES	YES
4.	YES	YES	NO	NO
5.	YES	YES	YES	YES
6.	YES	YES	YES	YES
7.	YES	YES	NO	NO
8.	YES	YES	YES	YES
9.	YES	YES	YES	YES
10.	YES	YES	YES	YES
11.	YES	YES	YES	YES
12.	YES	YES	YES	YES
13.	YES	NO	NO	NO
Total	13	12	10	10

Student number five was an attorney who enrolled in the class for enrichment purposes. He did not complete the first film nor the second. He said that he intends to do so, but after pressures at his office subside.

Student number six was an Episcopal priest. He was unable to complete the second film due to pressures of his job. The end of the semester coincided with the Christmas season and probably added to his already busy schedule.

Student number twelve dropped the class after the posttest and before the first film was due. Although more attrition occurred in the treatment group, no significant reason was identified.

Three students did not complete the course requirements in the control group (refer to Table 5.13). Student number four was an elementary school teacher in a distant town. She did poorly on the first film and only fair on the posttest. She appeared to be intimidated by the films her peers were producing and felt embarrassed when her peer critiqued her film in class. When the last class day came she was there but without her film.

Student number seven was a construction worker who enrolled in the class for enrichment. He was a very capable amateur still photographer who had

previously taken the intermediate and advanced photography courses offered at the University of Wisconsin - LaCrosse. Moving pictures failed to excite him as still photography did. He failed to complete the second film although he was at work on it.

Student number thirteen dropped the class after the posttest and before the first film was due. He said he was too busy to do the class justice and would enroll again another semester.

Summary

The effectiveness of two approaches to teaching the master scene concept of motion picture production was compared. One approach was the traditional lecture method. The other employed a simulation exercise. Five hypotheses were tested using data obtained from a post-test and the analysis and evaluation of two films that each student produced. A t ratio was used to test the hypotheses. Four null hypotheses were rejected. One was not rejected. The results are summarized in Table 5.14.

By rejecting H_o1 it was found that a difference existed between the mean scores on the posttest of the treatment group and the control group. The null hypothesis was rejected at the .05 confidence interval.

By rejecting H_o2 and H_o3 it was found that a difference existed between the mean scores of the

treatment and control groups in the section of the evaluation form on editing for both the first and second films. Null Hypothesis 2 was rejected at the .005 interval and null Hypothesis 3 at the .001 interval.

TABLE 4.14.--Summary of the five null hypotheses tested and the confidence interval of rejection or acceptance

Null Hypotheses	Rejected/Accepted	Confidence Interval
1	Rejected	.05
2	Rejected	.005
3	Rejected	.001
4	Rejected	.005
5	Accepted	.05

It was found that a difference in the mean number of master scenes included in the first film between the treatment and control group at the .005 confidence interval allowed for rejection of null Hypothesis 4. Null Hypothesis 5, testing the same for the second film, failed to be rejected at .05 interval.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The summary, conclusions, a discussion and implications for future research are presented in this chapter.

Summary

This research compared the effectiveness of two approaches to teaching the master scene concept of motion picture production. One approach was the traditional lecture method. The other employed the lecture with simulation exercises. The simulation exercises were used because they provided the student with practice in representative aspects of the real situation encountered in making a film.

All students enrolled (25) in AV323/523, Fundamentals of Motion Picture Production, offered by the Audiovisual Department of the University of Wisconsin - LaCrosse during the fall semester 1973 - 1974 were the subjects. The class was randomly divided into two groups of almost equal size. One group was taught in the traditional manner and, in addition, received the

treatment. The other group was taught in the traditional manner and did not receive the treatment.

A sequence of three events comprised the treatment. The first and second events mimicked the planning and shooting stages of film making and provided the framework for the third. The third was a simulated editing experience involving the actual construction of a visual statement from available paper footage. The simulated film consisted of three major strips of sketches that depicted in an abbreviated LS, MS and CU for a man catching and then tossing a baseball. Additional frames with ECU shots were also included.

Two instruments were constructed to gather data for analysis. They were a posttest, which was administered in the eighth week of the semester, and the editing section of the film evaluation form. Two films per student were evaluated.

In order to conduct this experiment, an original simulation was constructed. The model proposed by Crawford and Twelker was used as a guide. The approach covered thirteen steps which are summarized as:

(1) Delineating what is to be taught;

(2) Determining the best approach to teaching it;

(3) Validating the method.

The following five hypotheses were tested using a t ratio for the comparison of two sample means.

Hypothesis 1:

No difference will be found between the mean scores on the posttest of the treatment group and the control group.

Hypothesis 2:

No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the first film.

Hypothesis 3:

No difference will be found between the mean scores of the treatment and control groups in the editing section of the evaluation form for the second film.

Hypothesis 4:

No difference will be found in the mean number of master scenes included in the first film between the treatment group and the control group.

Hypothesis 5:

No difference will be found in the mean number of master scenes included in the second film between the treatment group and the control group.

The major difficulty encountered during the research was student mortality. At the time the post-test was administered, both samples were at maximum size (treatment group - 12, control group - 13). Ten students in the treatment group and twelve students in

the control group completed the first film. The second film was completed by eight in the treatment group and ten in the control group.

Four of the five null hypotheses were rejected. The first hypothesis was rejected at the .05 interval. The second hypothesis was rejected at the .005 interval. The third hypothesis was rejected and was significant at the .001 confidence interval. Hypothesis 4 was rejected at the .005 confidence interval but Hypothesis 5 failed to be rejected at the .05 interval.

Conclusions

These conclusions are based upon the findings summarized above.

1. The lecture with simulation exercises caused students to do better on the posttest than students who were taught in the traditional lecture method. The posttest was comprised of questions derived from the behavioral objectives and implied enabling objectives and covered the planning, shooting and editing stages of film making.
2. The first films made by students who received the lecture with simulation exercises scored higher in the editing section of the film evaluation form than the first films made by the

students in the control group. Specifically, their films were closer to these optimum criteria:

a) Sequence--adequate footage was used for maximized visual potential so that the choice and order of perspectives were harmonious with and explicated the subject of the film.

b) Use of perspectives (LS, MS, CU and ECU)--the setting, subject and action were portrayed using a wide variety of technically excellent LS, MS, CU and ECU.

c) Matched action--the action was matched accurately and correctly everytime it was logically needed.

d) Pacing--totally harmonious with the subject and the action.

3. Students who received the lecture with simulation exercises constructed a second film that scored higher in the editing section of the film evaluation form than students in the control group. These films, too, were closer to the optimum standards defined in conclusion two above.

4. Students who received the lecture with simulation exercises included a higher mean number of master scenes in their first film than students who did not receive the treatment.

5. The mean number of master scenes increased in the second films by the students receiving the lecture with simulation exercises, but due to an excessively large number of master scenes by one student the results were not statistically significant. When statistically analyzed, this student's raw score deviated from the sample mean to such an extent it resulted in failure to reject the hypothesis.

Discussion

The design and execution of this research has been a worthwhile and rewarding activity. It has offered many lessons that are perhaps applicable to researchers interested in the design of a similar study or one that involves similar variables.

First, the delimiting of the topic to its narrowest, most easily managed level is paramount. As the study was originally conceived, it had a similar goal of validating a better approach to teaching film production. But, it involved the collection of data about more variables related to film production--some were of less significance than others. The treatment, also, was much less specific than it is defined in this study and involved more activities than the simulation exercises. Through the process of narrowing, the variables at the crux of the problem that inspired this

research were isolated. A much more controlled experiment was designed and subsequently a treatment and evaluation instruments more appropriate to the intent of the study.

A second lesson parallel to the first is not to hesitate to conduct the research in the setting in which the results are to be applied. Since the class, Fundamentals of Motion Picture Production, frequently had an enrollment of about fifteen students or less it was feared that this would be too few to conduct statistically valid research. Although the results of this study are not generalizable to a large population, they are generalizable to the population to which the results of the experiment apply.

One of the most difficult problems encountered in this study was the definition of precise behavioral objectives. With many research studies this would not be a problem. However, film evaluation and aesthetics are heavily couched in the subjective feelings of the viewer. Behavioral objectives were written and the films produced during the course of this research were evaluated according to the prescription of the objectives. Although only one evaluator was used to score these films, it is doubtful that several evaluators, knowledgeable in film production and criticism, could be convinced to give up their repertoire of experiences and evaluate the same films against the behavioral objectives defined.

A questionable aspect of this experiment is whether the treatment merely provided the students receiving it with a second chance to learn the concepts of planning, shooting and editing a master scene. Although this study is not designed to isolate this possibility, it is, nevertheless, not believed that repetition is a principal factor for four reasons:

1. The class was offered several times before the experiment was conducted. Subtle variations in emphasis were attempted each semester, including a review of concepts, with no discernable difference in the quality of the films produced.

2. The concepts involved are not that difficult to comprehend and require only a little logic. The film, "Film Appreciation: Elements," which has been used every semester details the shooting and editing of the master scene in a comprehensible and somewhat entertaining manner.

3. It is believed that students have had enough direct or indirect contact with "home movies" to believe they can produce a good film with their limited repertoire of experience. Also, since the master scene approach inevitably produces a quantity of footage that will never be

used a decision may be made at the time of shooting to economize and shoot only what is thought to be needed.

4. The unfamiliarity of the equipment (camera, tripod, editor and splicer) may also further restrict what should be--at this stage of their film making--a somewhat uninhibited approach to filming.

It is believed that the addition of the simulation exercises linked the theory to the actual production. It allowed the students to make appropriate editing decisions without the restrictions imposed by unfamiliar equipment. Also, by looking at what their peers did with identical simulated strips of film, the varied visual potential was shown.

If the question discussed above had a major influence on the results of the study, a marked change in the data would probably be evident. First, if the simulation experiences merely provided the students with a second chance to learn the concepts evaluated, the first production should have done the same for the control group. It would seem likely that the scores on the evaluation form of the final film for the control group would be close to the scores of the first film for the treatment group. This was not the case. Although a t ratio was not computed, the mean of the total editing

scores for the first film of the treatment group were higher (16.1) than the mean editing scores for the second film of the control group (9.2). Likewise, the treatment group included a mean 2.6 master scenes in their first films compared to a mean .8 for the control group in their second films.

Another questionable aspect of the experiment was whether the evaluation sheet of the first film the students in the control group received taught them concepts being tested in the experiment. There is no precise answer to this question. The evaluation sheets provided an assessment of the quality of their first films. However, the treatment group also received evaluation sheets so no additional variable was introduced that affected only one of the two groups. It should also be recalled that the students receiving the treatment were taught no additional concepts of film production--the concepts were just recapitulated in a different format.

Other factors influencing student behavior were probably involved with this research; they are difficult to isolate much less control. Students are often at the mercy of their financial situation at any given moment. If they happen to be low on money at a time a film is to be produced, it may affect the quantity as well as the quality of the footage they shoot. Attitudes of the students are also variables. It is unlikely that

conscientiousness can be consistently sustained for a sixteen-week semester. For many undergraduate students, pressures from their extra-curricular activities have an unwieldy influence.

This discussion would not be complete without mentioning possible improvements for the simulation exercises. As it was designed, the simulated editing exercise was somewhat crude. It could be re-done so that there are finer gradations in the movement from one frame to the next. This would allow for more precise editing on the part of the learner--especially with regard to pacing and matched-action cutting.

It also seems feasible that the development of learning kits incorporating many of the elements of the treatment (behavioral objectives, dialogue on paper or cassette, visual concepts on film and strips of simulated film) would be a logical extension of this research. These kits could be given to each student to be used outside class.

This research has identified the use of simulation exercises in the repertoire of instructional technique. Within the restrictions imposed on this study, the addition of simulation exercises produced the results hoped for at the outset. As a teacher of several media courses--graphics and various levels of still photography as well as motion picture production--

the results of this study prompt one to apply parallel ideas in the other courses. An appraisal of instructional procedures is certainly forthcoming but with a guarded optimism that simulation is not a panacea to solve all instructional problems. It is only one of many educational experiences. Media research in education has verified that a variety of techniques and materials are needed for competent education.

The present study has defined criteria against which the films produced during the study were evaluated. There continues to be strong disagreement among educators as well as filmmakers as to what constitutes a good film. The medium fluctuates somewhere in a continuum bordered on one end by objective standards and on the other by subjective art. Until filmmakers and educators can agree on what constitutes a good film, the value of this research can never be fully determined.

Implications for Future Research

Since this study involved the development and testing of a new simulation, the study should be replicated again to produce another set of data for identical analysis. Statistical regression may be evident with replication which would mean the extreme high and low scores recorded in this study would be less extreme. It is expected the results would be much the same but with the possible rejection of $H_o 5$.

This study should be replicated to eliminate methodological flaws. Subject mortality is a flaw and the fact that it occurred unevenly to the two groups is unexplained in this study. Also, the length of each film was not recorded. With a replication of the study, a correlation coefficient could be calculated between the length of the film and the number of master scenes included.

The small sample size is a problem. It is recommended that a replication of this study be done with a larger film production class.

Due to the length of time involved in a sixteen-week semester, socialization between groups is a possibility. Although it is believed to have been minimal if not nonexistent in this study, it might be better controlled in any replication that involved a shorter time period.

The results of this research are generalizable only to the Fundamentals of Motion Picture Production class at the University of Wisconsin - LaCrosse. If this study could be replicated, for instance, at a summer workshop with students from a large cross section of American universities, the results would be generalizable to a much broader population. It can only be assumed by teachers of film production that the results of this study may be applicable to their teaching/student environment.

Variations on the format described in this research should also be attempted. For example, pairing of two students to edit a simulated film may cause positive results. The innovative ideas of one may arouse more insightful ideas in the other.

Another possibility would be the editing of two or three simulated film sets of the same subject--each one employing a different strategy. This might result in the appearance of more innovative editing strategies in the students' actual film productions.

A possibility closely related to the one above would be for each individual to edit two or three simulated film sets involving different subjects.

As was mentioned above, more sophisticated simulations could be developed and tested. More subject detail and finer gradations of movement could be incorporated in future versions. This would allow for more precise evaluation--especially with pacing.

APPENDICES

APPENDIX A

BEHAVIORAL OBJECTIVES

APPENDIX A

PLANNING OBJECTIVES

Objectives	Conditions	Performance Criteria
Verbalize everything you see in the order you see it	within a given situation, using your memory	so that you include the setting, the subject and the action
Verbalize the recording of a scene	with a motion picture camera and using such camera movements as panning, tilting, trucking and zooming	so that you include the setting, the subject and the action
Verbalize a filmic interpretation of everything you see	within a given situation, using the knowledge of film you have to this point	so that you include the setting, the subject and the action

CINEMA VOCABULARY OBJECTIVES

To be able to recognize a long shot and medium shot	in a film or simulation	so that the subject and setting are identifiable
To be able to recognize a close-up and extreme close-up shot	in a film or simulation	so that the subject is identifiable
To be able to shoot a long shot and medium shot	with a motion picture camera and tripod	so that the subject and setting are identifiable
To be able to shoot a close-up and extreme close-up shot	with a motion picture camera and tripod	so that the subject is identifiable
To be able to recognize a low, normal and high angle of view	in a film or simulation	so that a feeling of dominance, equality or subordination is communicated

Objectives	Conditions	Performance Criteria
To be able to shoot a low, normal and high angle of view	with a motion picture camera and tripod	so that a feeling of dominance, equality or subordination is communicated
To be able to recognize a pan shot	in a film or simulation	each time it is encountered
To be able to shoot a pan	with a motion picture camera and tripod	that is smooth and of approximate speed of the eye when scanning a location
To be able to recognize a tilt	in a film or simulation	each time it is encountered
To be able to shoot a tilt	with a motion picture camera and tripod	that is smooth
To be able to recognize a dolly and track (truck) shot	in a film or simulation	each time they are encountered
To be able to shoot both a dolly and track (truck) shot	with a motion picture camera, tripod and dolly	that is smooth and of a speed appropriate to the subject
To be able to recognize a zoom shot	in a motion picture or simulation	each time it is encountered
To be able to shoot a zoom shot	with a motion picture camera fitted with a variable focal length lens	so that it is smooth
To be able to recognize a boom shot	in a motion picture or simulation	each time it is encountered
To be able to boom a motion picture camera	on a tripod	so that it is smooth

SHOOTING OBJECTIVES

Objectives	Conditions	Performance Criteria
To recognize the long shot, medium shot and close-up	in a motion picture or simulation	as the three basic perspectives for recording a scene
To shoot a long shot, medium shot and close-up	with a motion picture camera	as the three basic perspecitives for recording a scene
To verbalize why a motion picture has pictorial continuity	using the terms - series of stills, hangs together, tells a story smoothly, coherently and logically	so that the motion picture format is distinct from other similar media such as a series of still photographs or a slide series
To recognize the master scene approach	in a motion picture or simulation	in each instance it is used
To be able to shoot a master scene and its components	with a motion picture camera and with approriate subject matter	so that there is plenty of footage to maximize the visual potential of the scene
To operate a motion picture camera	with automatic exposure control, variable focal length lens, variable focus and diopter control	so that the image is sharp, well exposed and steady
To identify an establishing shot, LS, MS, CU as components of the master scene approach	in a motion picture or simulation	each time the master scene is used in the film
To identify a cut-away and a cut-in	in a motion picture or simulation	each time they are presented
To identify a matched action cut	in a motion picture or simulation	each time it is presented

EDITING OBJECTIVES

Objectives	Conditions	Performance Criteria
To be able to splice film	with the Bolex and Hahnel splicers	so that the splice is clean and strong
To edit a master scene	using, LS, MS, CU, matched action and your imagination	to maximize the visual impact of the scene
		-so that the pacing is harmonious with the sequence
		-so that the best of the available footage is used in the film
		-so that the action is matched
		-so that the choice and sequence of perspectives is harmonious with the subject of the film.*

*For example, to build suspense, a series of cuts using close-ups could possibly be used because this perspective channels your vision so you do not see too much. What you do not see often arouses curiosity and suspense.

APPENDIX B

POSTTEST

AV 323/523
Fundamentals of Motion Picture Production _____ name

For the following multiple choice questions, select the statement that most accurately completes the statement.

1. A motion picture is more than a series of stills; it hangs together and tells a story smoothly, coherently and logically.
   This statement is referring to:
   A. A definition of the medium
   B. Pictorial continuity
   C. The language of film
   D. Eisenstein's theory of editing

2. A zoom shot is:
   A. Footage shot while using a turret mounted with three lenses.
   B. Shooting footage evolving from a LS to a MS to a CU from the same camera position using a variable focal length lens.
   C. A continuous change of the diopter while shooting.
   D. Accomplished by adding supplementary lenses to the regular lens.

3. When a film is edited it is:
   A. Done in the camera
   B. Done at the local processor
   C. Done at the scripting stage
   D. Physically cut apart and glued together so that one shot is juxtaposed with another.

4. The diopter control:
   A. Sets the correct frames per second for sync sound shooting.
   B. Places the correct filter in the camera for indoor shooting.
   C. Is part of the eye piece and is adjusted to the peculiarities of the filmmaker's eye.
   D. Assures that light does not get back through the eye piece to expose the film.

5. Our vision or what we see in a new situation is psychologically motivated. This way of seeing is mimicked in film making when the cinematographer:
   A. Views the edited production.
   B. Shoots long shots, medium shots and close ups.
   C. Uses a tripod.
   D. Uses color film stock instead of black and white.

Indicate whether the following statements are true or false.

6. T or F The ASA exposure index must be manually set on the Super 8mm cameras.

7. T or F There is a fixed frames per second rate on the Super 8mm cameras.

8. T or F The diopter control adjusts the reflex viewing system to the vision or eye of the cinematographer.

9. T or F Our Super 8mm cameras have a fixed focus which provides a sharp image of subjects within a range of 4 ft. to infinity.

10. T or F The zoom setting varies the focal length of the lens.

11. T or F As with a 35mm camera, the shutter speed must be set on the Super 8mm cameras.

12. T or F The f/stop is set automatically by the meter system on the Bolex 160.

13. T or F The shutter cocking device is located on the pistol grip of the Bolex 155.

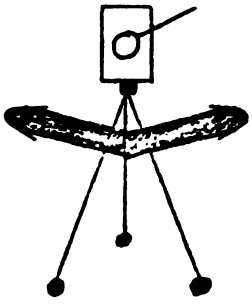
14. T or F The ASA of the film is set automatically according to a notch in the film cartridge.

15. T or F The diopter is a part of the taking lens mechanism.

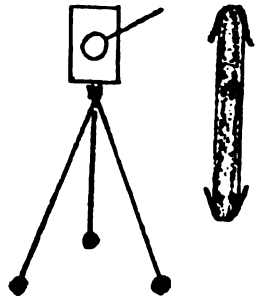
Label the camera movements illustrated below using the letter opposite the correct term in the column.

A. Tilt
B. Pan
C. Truck (track)
D. Zoom
E. Dolly
F. Boom

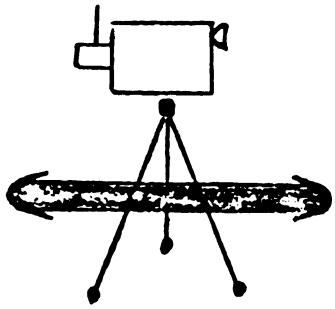
16. ___



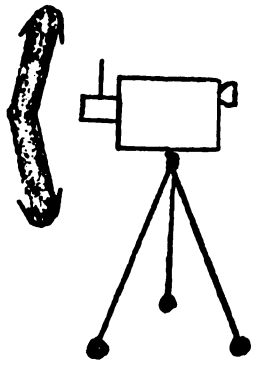
17. ___



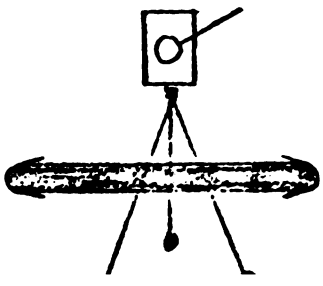
18. ___



19. ___

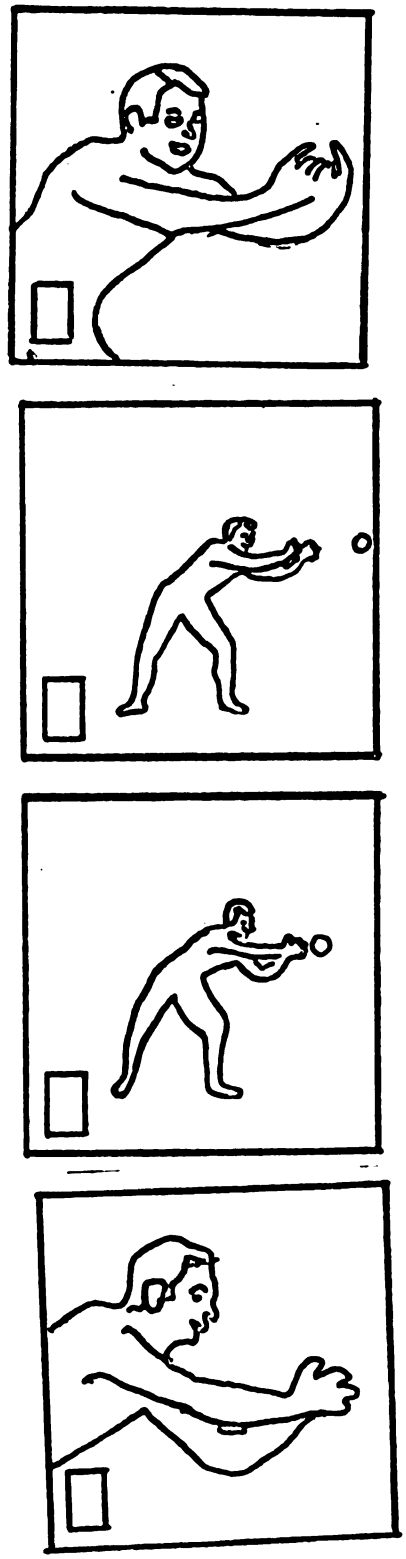


20. ___

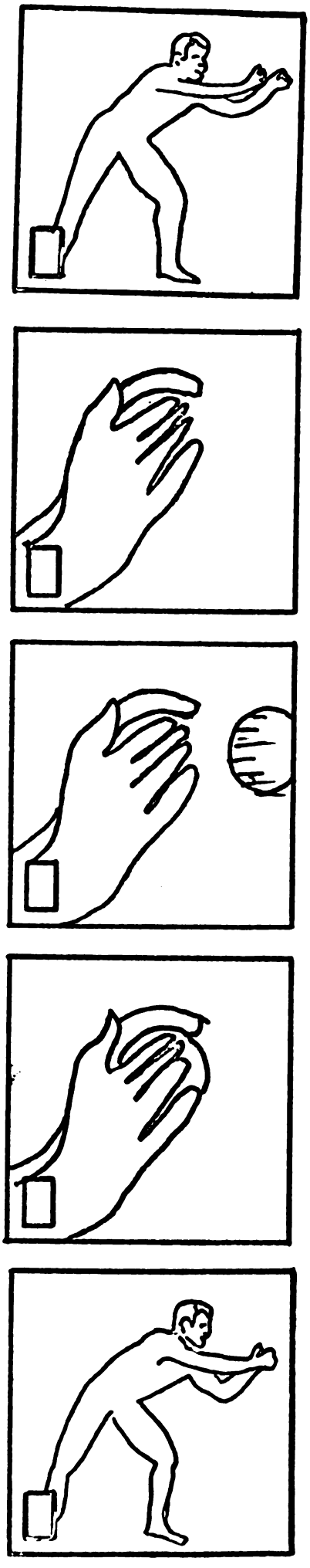


21. **The edited sequence to the right represents a**

    A. Matched action cut
    B. Cut in
    C. Cut away
    D. Pan

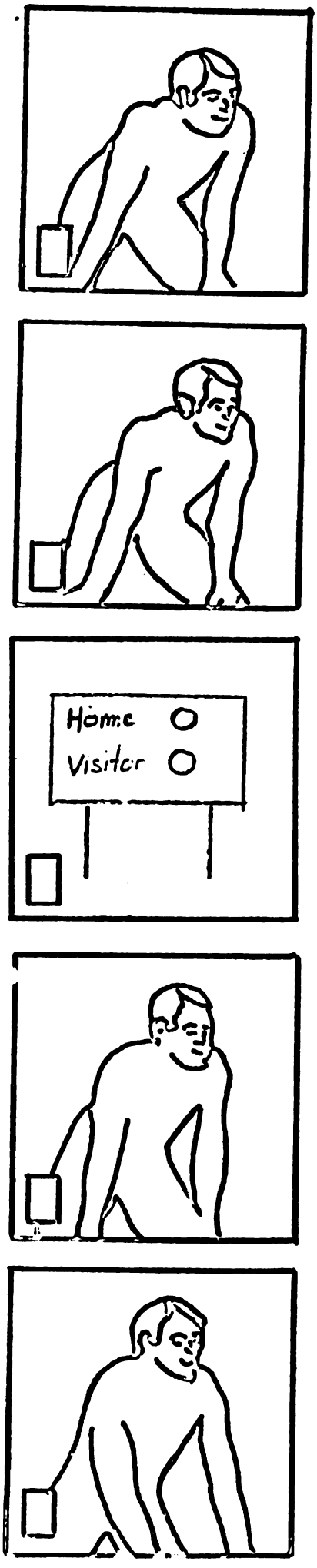


22. The edited sequence to the right represents a
    A. Cut in
    B. Cut away
    C. Dolly
    D. Boom



23. The edited sequence to the right represents a

A. Truck shot
B. Matched action cut
C. Dolly
D. Cut away



Assume the sequence of stills on the following two pages are single frames excerpted from a motion picture sequence. Each frame is lettered and represents a section of a shot within the sequence. Questions 24-56 below involve concepts that are implied in the filming and editing of the simulated film. Identify each frame in the simulated film that represents the concepts listed below by circling the corresponding frame letter(s) opposite the concept.

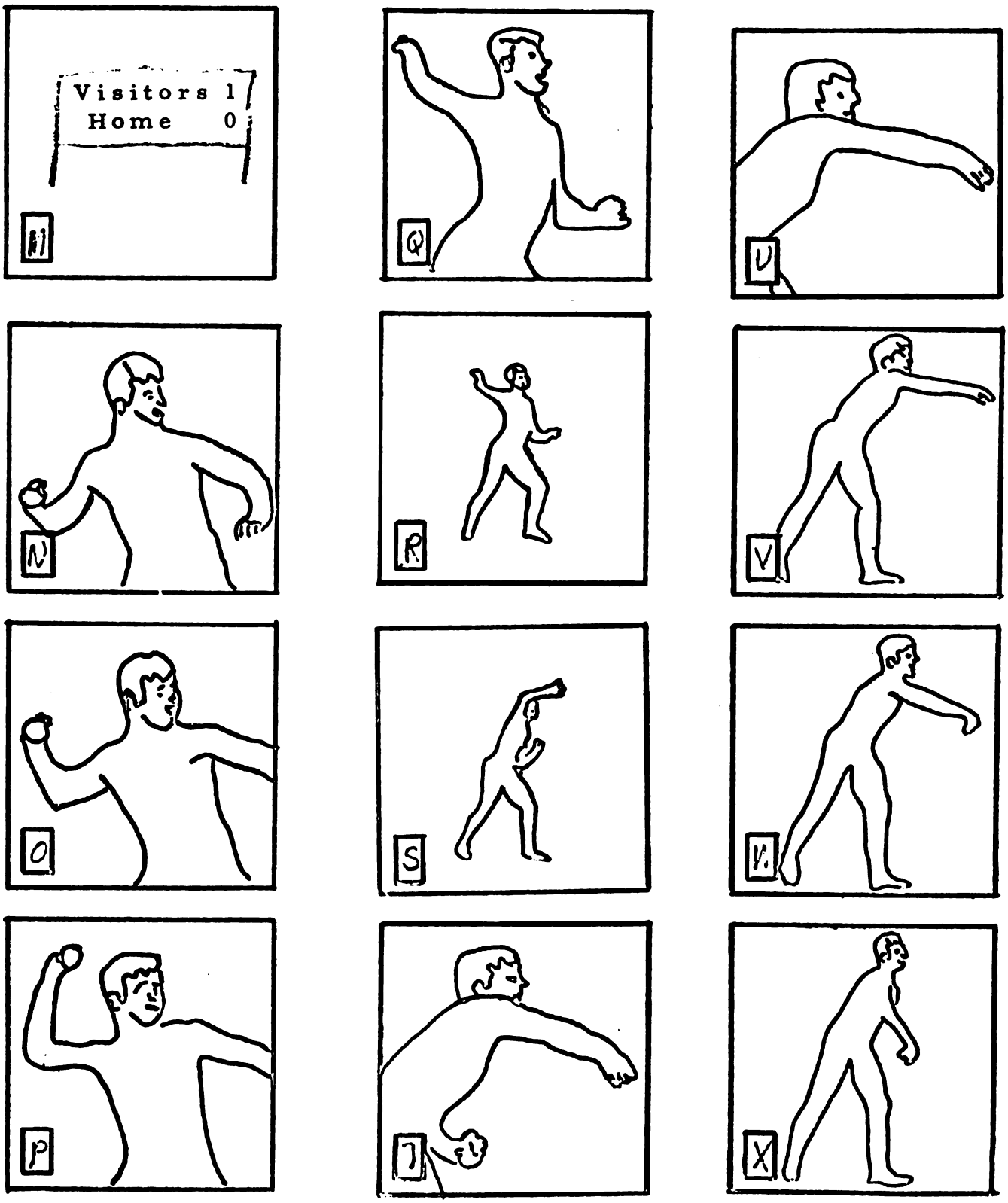
24-56

Close-up	A B C D E F G H I J K L M N O P Q R S T U V W X
Extreme close-up	A B C D E F G H I J K L M N O P Q R S T U V W X
LS/Establishing shot	A B C D E F G H I J K L M N O P Q R S T U V W X
Medium shot	A B C D E F G H I J K L M N O P Q R S T U V W X
LS/ Re-establishing shot	A B C D E F G H I J K L M N O P Q R S T U V W X
Cut away	A B C D E F G H I J K L M N O P Q R S T U V W X
Cut in	A B C D E F G H I J K L M N O P Q R S T U V W X
Matched action (circle the adjacent two letters for each)	
	A B C D E F G H I J K L M N O P Q R S T U V W X

57.

What approach to film making do the stills on the following two pages illustrate?

A. Master scene
B. Expositional editing
C. Eisenstein's montage
D. Panning


Visitors 1
Home 0
M
Q
U
N
R
V
O
S
W
P
T
X

APPENDIX C

EVALUATION FORM

APPENDIX C

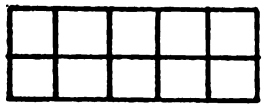
EVALUATION FORM

Content of Film

Concept of film

1 2 3 4 5

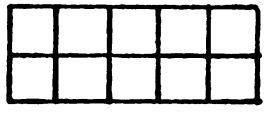
Idea
Effectiveness of film



Photography

Camera techniques

Composition



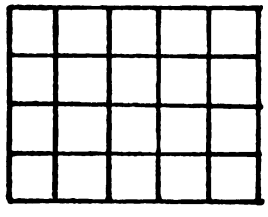
Editing

Sequence

Use of perspectives
(LS, MS, CU ECU)

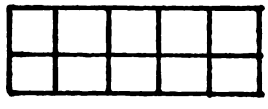
Matched action

Pacing



Use of titles and graphics

Use of sound

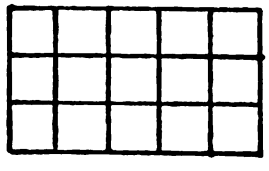


Technical Quality

Lack of physical imperfections

Sharpness - detail

Camera techniques
(use of tripod, manual dexterity)

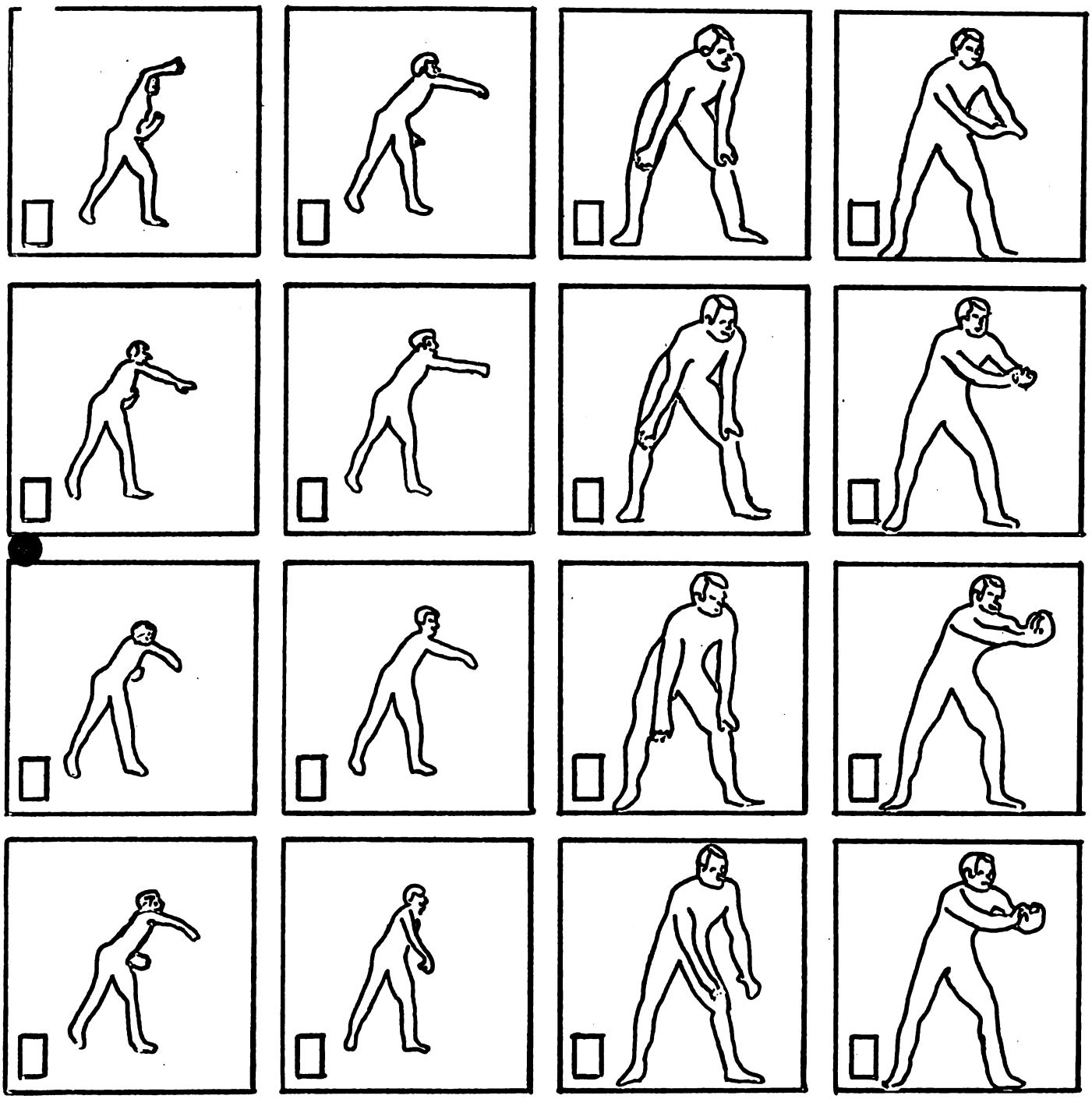


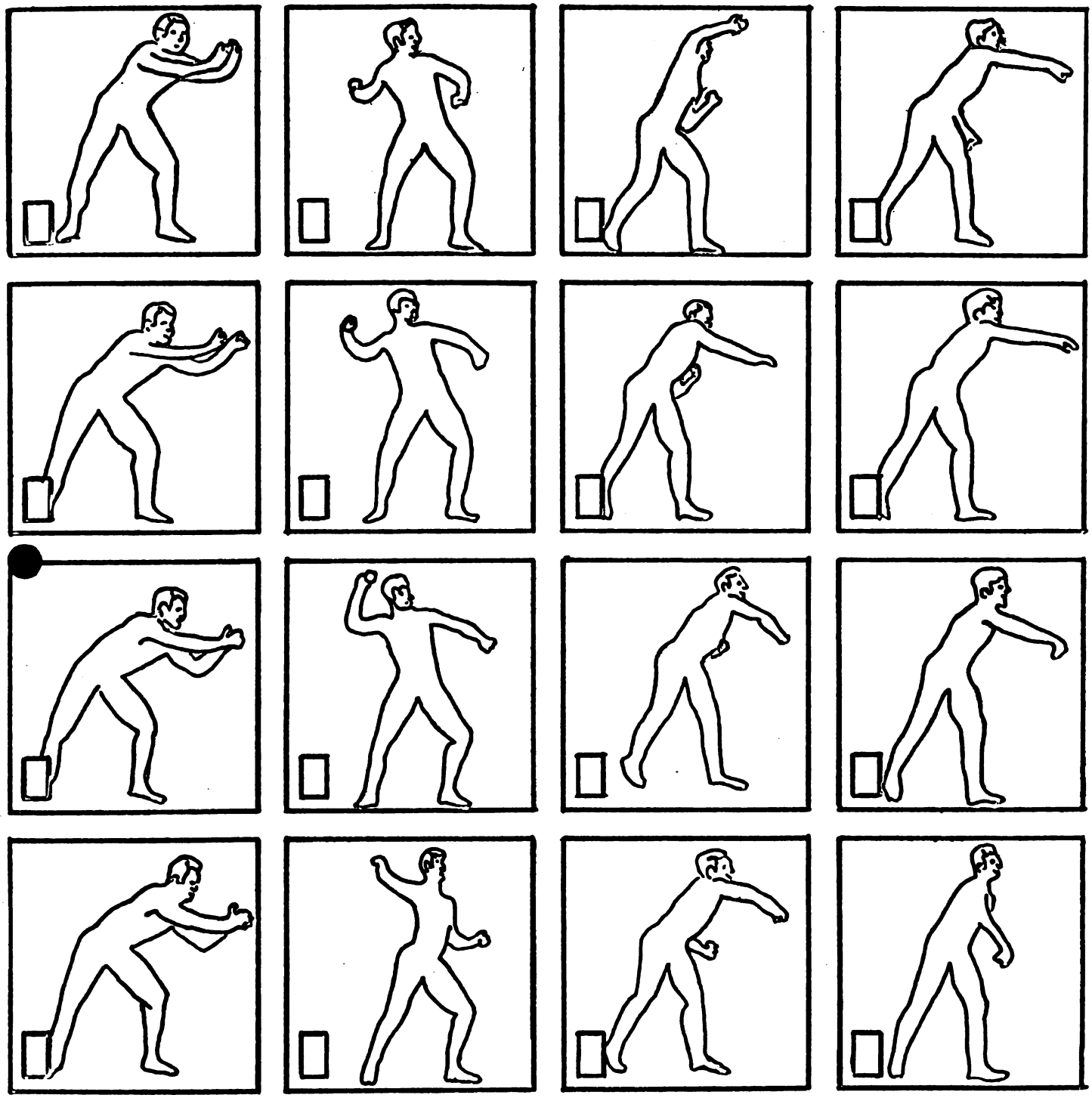
Titles and graphics

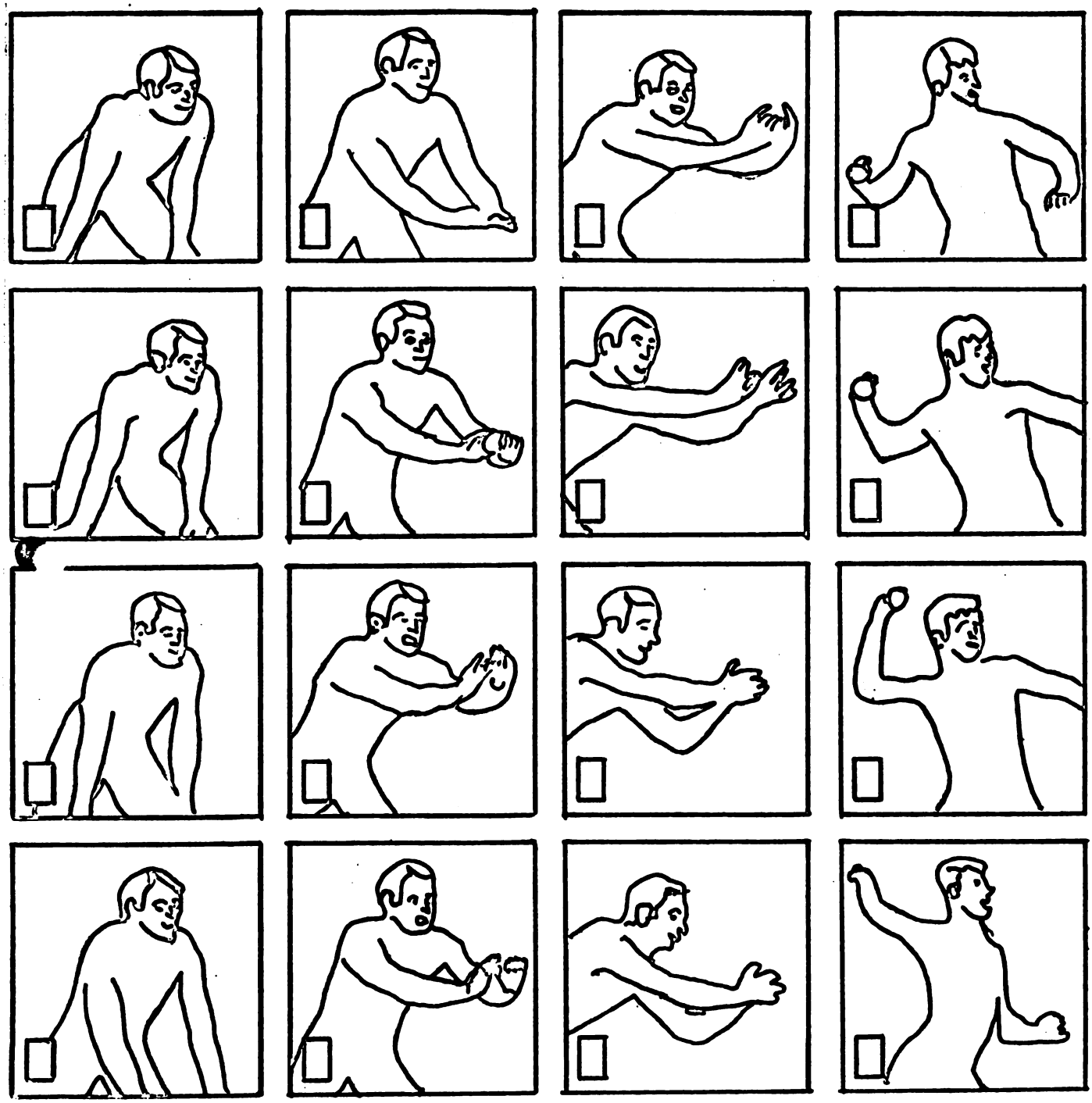
APPENDIX D

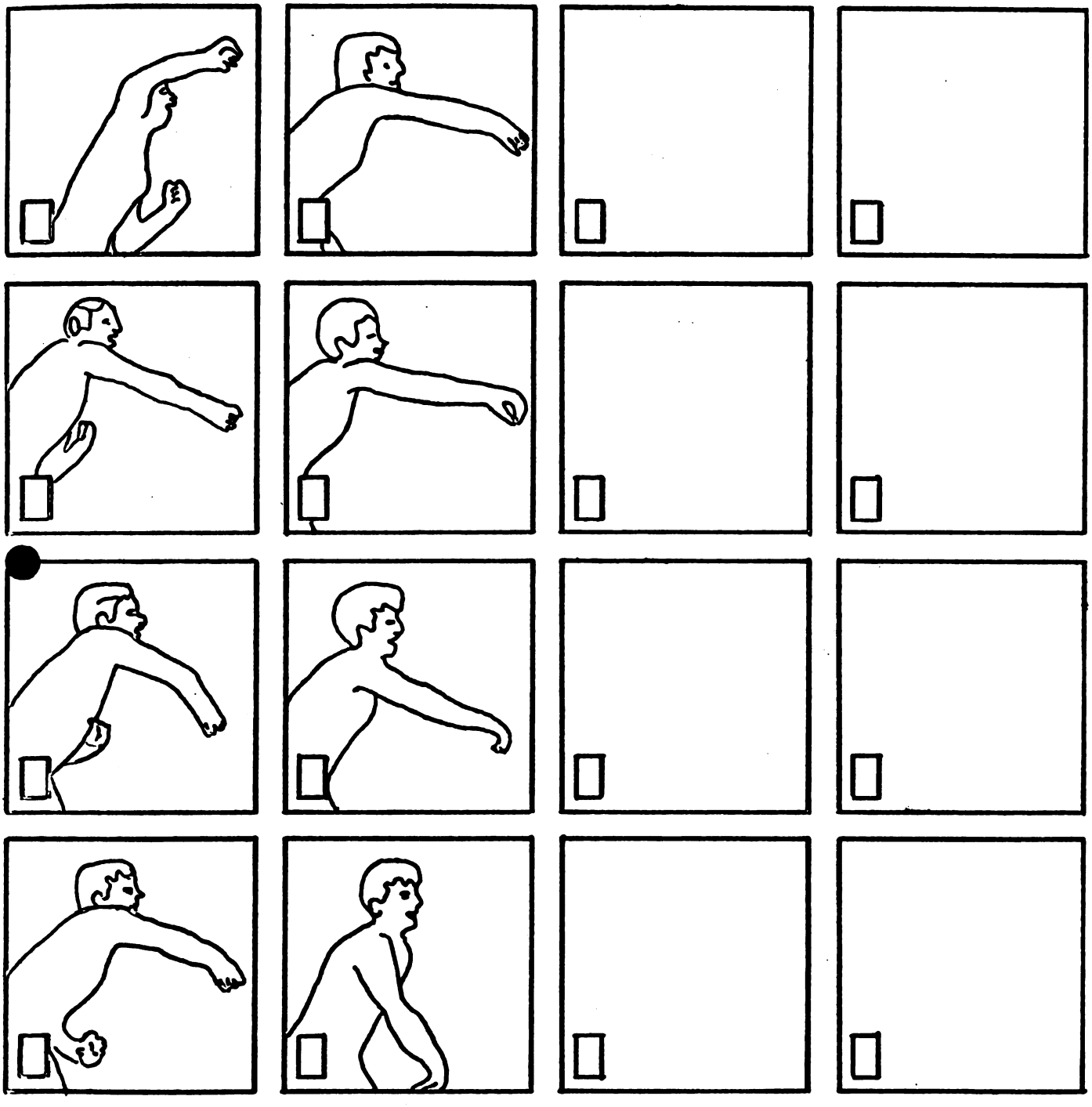
SIMULATED FILM STRIPS

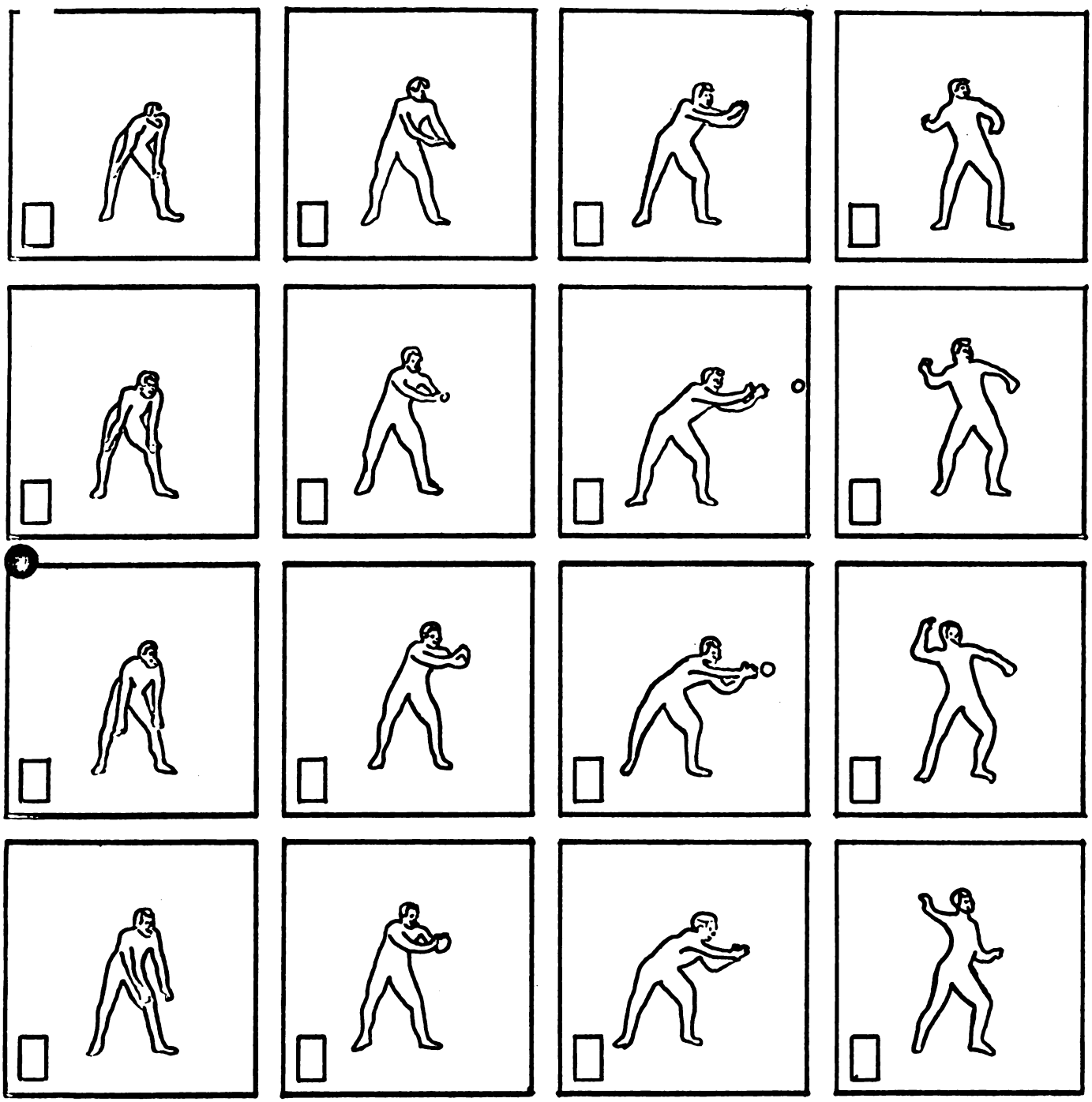
APPENDIX D











APPENDIX E

PERFORMANCE CRITERIA

	1	2	3	4	5
Sequence	The order of the shots does not communicate the subject of the film.	The order of the shots barely communicates the subject of the film.	The order of the shots communicates the subject but not as effectively as possible.	The order of the shots communicates the subject effectively.	Adequate footage is used for maximized visual potential - so that the choice and order of perspectives are harmonious with and explicates the subject of the film.
Use of perspectives (LS, MS, CU, ECU)	One perspective used for the most part resulting in a dull film. Some footage may be inferior due to inadequate shooting.	One perspective dominates (usually LS). Some footage may be technically inferior due to inadequate shooting.	Mixture of MS, CU, and ECU is acceptable although LS dominates. Some footage may be technically inferior.	The setting, subject, and action are portrayed using fewer LS, MS, CU, and ECU than are possible for optimum communication of content. Technically poor footage is virtually nonexistent.	The setting, subject and the action are portrayed using a wide variety of technically excellent LS, MS, CU and ECU.
Matched action	No matched action is used.	Action is poorly matched so that there are obvious jumps.	The matched action cuts are acceptable, but the film shows the potential for more of them.	All matched action cuts are correct but the film potentially could use at least one more.	The action is matched accurately and correctly everytime it is logically needed.

	1	2	3	4	5
Pacing	No sense of pacing evident. Continuity is almost lacking due to excess length of shots.	Shots are generally long although there is some evidence of continuity.	The shots flow or exhibit continuity but several shots could be longer or shorter.	Areas of the film are either slightly fast or slow.	Totally harmonious with the subject and action.

APPENDIX F

POSTTEST ITEM ANALYSIS

APPENDIX F

Item analysis for posttest

Test Item	High	Low	Difficulty	Discrimination Index
1	4	6	.833333	-.333333
2	6	6	1	0
3	6	6	1	0
4	5	6	.916667	-.166667
5	5	5	.833333	0
6	6	6	1	0
7	5	5	.833333	0
8	6	6	1	0
9	5	6	.916667	-.166667
10	6	6	1	0
11	6	5	.916667	.166667
12	6	5	.916667	.166667
13	4	3	.583333	.166667
14	6	6	1	0
15	5	3	.666667	.333333
16	6	5	.916667	.166667
17	6	4	.833333	.333333
18	6	3	.75	.5
19	6	5	.916667	.166667
20	6	5	.916667	.166667
21	6	5	.916667	.166667
22	6	6	1	0
23	6	6	1	0
24	6	1	.583333	.833333
25	6	0	.5	1
26	6	0	.5	1
27	6	0	.5	1
28	6	0	.5	1
29	6	0	.5	1
30	6	0	.5	1
31	6	0	.5	1
32	6	0	.5	1
33	6	0	.5	1
34	6	2	.666667	.666667
35	6	2	.666667	.666667
36	6	4	.833333	.333333
37	6	4	.833333	.333333
38	6	6	1	0
39	5	5	.833333	0
40	6	2	.666667	.666667
41	6	1	.583333	.833333
42	6	0	.5	1
43	6	0	.5	1
44	6	0	.5	1
45	6	4	.833333	.333333

Test Item	High	Low	Difficulty	Discrimination Index
46	6	4	.833333	.333333
47	6	6	1	0
48	5	2	.583333	.5
49	4	1	.416667	.5
50	6	4	.833333	.333333
51	5	1	.5	.666667
52	3	2	.416667	.166667
53	5	4	.75	.166667
54	5	3	.666667	.333333
55	6	2	.666667	.666667
56	3	3	.5	0
57	6	4	.833333	.333333

Variance = 44
Average Difficulty = .739766
Average Discimination Index = .391813

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

Books

Arnheim, Rudolf. Towards a Psychology of Art. Berkeley: University of California Press, 1966.

_____. Visual Thinking. Berkeley: University of California Press, 1969.

Barton, Richard P. A Primer on Simulation and Gaming. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Campbell, Donald T., and Stanley, Julian C. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally and Co., 1966.

Crawford, Jack, and Twelker, Paul A. "Affect Through Simulation: The Gamesman Technologist." The Affective Domain A Resource Book for Media Specialists. Washington, D.C.: Communication Service Corporation, 1970.

DeCecco, John P. The Psychology of Learning and Instruction: Educational Psychology. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.

Debes, John L. "The Loom of Visual Literacy--An Overview." Proceedings of the First National Conference on Visual Literacy. New York: Putnam Publishing Corp., 1970.

Forsdale, Louis, ed. 8mm Sound Film and Education. New York: Bureau of Publications, Teachers College, Columbia University, 1962.

Katz, John Stuart, ed. Perspectives on the Study of Film. Boston: Little, Brown and Co., 1971.

Kemp, Jerrold E. Planning and Producing Audiovisual Materials. Scranton, Pa.: Chandler Publishing Co., 1968.

Kurfman, Dana, and Phillips, Ina M. Using Simulation to Involve Students. Washington, D.C.: The Association of American Geographers, 1970.

Lowndes, Douglas. Film Making in Schools. New York: Watson-Guptill Publications, 1968.

Muybridge, Eadweard. Human Figure in Motion. New York: Dover Publications, Inc., 1955.

Roberts, Kenneth H., and Sharples, Win, Jr. A Primer for Film-Making. New York: Pegasus Publishers, 1971.

Spottiswoode, Raymond. Film and Its Techniques. Berkeley: University of California Press, 1963.

Sullivan, Sister Bede. Movies: Universal Language. Notre Dame, Ind.: Fides Publishers, Inc., 1967.

Wittich, Walter A., and Schuller, Charles F. Instructional Technology Its Nature and Use. New York: Harper and Row, 1973.

Periodicals

Abt, Clark C. "Games Pupils Play: Why Educational Games Win Converts." Nation's Schools 80 (October 1967): 92-93.

Allen, William H. "What Do 50 Years of Media Research Tell Us?" Audiovisual Instruction 18 (March 1973): 48.

Association for Educational Communications and Technology. Audiovisual Instruction 17, 7 (September 1972): 38.

Coleman, John S. "Academic Games and Learning." National Association of Secondary School Principals Bulletin 52 (February 1968): 68-70.

Culkin, John M., S.J. "Towards Mediacy: An Extension of Film and Television Study." Audiovisual Instruction 13, 1 (January 1968): 11-13.

Debes, John L. "The Loom of Visual Literacy." Audiovisual Instruction 14, 8 (October 1969): 25-27.

Elgabri, Ali. "Teaching Film Making in the University." Audiovisual Instruction 15 (November 1970): 36.

Forsdale, Joan Rosengren, and Forsdale, Louis. "Film Literacy." AV Communication Review 18, 3 (Fall 1970): 263-75.

Heinkel, Otto A. "Evaluation of Simulation as a Teaching Device." The Journal of Experimental Education 38, 3 (Spring 1970): 32.

Hoban, Charles F. "A Current View of the Future of Theory and Research in Educational Communication." Audiovisual Instruction 24 (January 1974): 31.

Jasnosz, Thomas A. "Zooming In On Film Production: VICOED." Educational Screen and Audiovisual Guide 50, 2 (February 1971): 11.

Sheratsky, Rodney E. "Freaking Around with Films." Media and Methods 7, 3 (November 1970): 42.

Sohn, David A. "See How They Run . . . " Media and Methods 6, 3 (November 1969): 37-39.

Stern, Malcolm. "Mock Films." Media and Methods 8, 3 (November 1971): 493.

Wilms, Douglas C., and Steinbrink, John E. "Education: A Simulation of Contemporary Politics." The Journal of Geography 70 (November 1971): 493.

Other Sources

Adams, Dennis M. "Education, Theory and Practice--Some Aspects of Simulation Gaming and Group Process." Dissertation Abstracts International 33 (1973): 5611-A.

Coats, James Harold, Jr. "A Comparative Study of the Effects of Simulation and Traditional Teaching on Student Achievement, Attitude, Motivation, and Interpersonal Relations in Eleventh Grade American History." Dissertation Abstracts International 34, 6 (December 1973): 3014-A.

Erickson, Carlton W. H. "The Effectiveness of Joint Pupil - Teacher Motion Picture Production as a Method of Teaching General Science (Volumes I and II)." Dissertation Abstracts International 15 (1955): 2488.

Law, Eloise Jeannette. "Feasibility of Three Types of Simulation Experiences in Preparation for Student Teaching in Home Economics." Dissertation Abstracts International 33 (1973): 5940-B.

Markwardt, Dean M. Student Film Production as an Educational Activity at the Secondary Level. A seminar paper - Wisconsin State University - LaCrosse, July, 1971, p. 22.

McGregor, Edgar Russell. "A Design for a Mediated First Course in Film Production." Dissertation Abstracts International 32 (1971): 3342-A.

Riggsby, Dutchie Sellers. "Film Production as an Activity in Sixth Grade Social Studies: A Study of Cognitive Retention." Dissertation Abstracts International 33 (1972): 1083-A.