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ABSTRACT

Motion pictures are not simply pictures that move. Instead, they involve a range of symbols, each of which has a somewhat unique function in the communication of meaning. The power of motion pictures lies in the range of symbols that can be employed and in the degree of their integrated expression of meanings. We can improve the effectiveness of motion pictures in instructional communication when we understand the function of pictures, language and musical symbols, and develop skills in using these symbols both uniquely and in reinforcing patterns as appropriate; for instruction is the arrangement and administration of learning situations. The effectiveness of instruction may be expected to improve when learning situations are arranged and administered so that basic principles of learning are in operation. Thus proper use of symbols can give an instructional film tone, context, novelty, opportunities for audience identification, and a feeling left with the audience of the necessity for further personal effort in order to achieve closure. More research and experimentation are needed so that instructional films will at least not violate principles of learning. (MM)

# INCIDENTAL REPORT NO. 2

# SOME ASPECTS OF LEARNING FROM FILMS

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21 June 1949

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# SOME ASPECTS OF LEARNING FROM FILMS

The use of motion pictures for instruction is complicated by (1) the fact that motion pictures are not simply pictures that move on a screen, and (2) the further fact that instruction as practiced is not necessarily the best situation for learning. From these two facts arise many problems related to the production and use of films for instruction; and the problems of research in the instructional use of motion pictures are thereby made particularly difficult.

In order that perspective may be obtained in the instructional role of motion pictures, it is proposed to identify some of the symbolic levels and forms used in the medium of motion pictures, and to sketch some of the dynamics of learning that influence, at least theoretically, the effectiveness of motion pictures in instruction. If the symbolic forms used in motion pictures are understood, and if the dynamics of learning are applied to the use of these forms, the instructional efficacy of motion pictures should be improved and the results of this improvement should be demonstrable.*

## I. THE SYMBOLIC NATURE OF FILMS [1]

Motion pictures are not simply photographs projected so as to convey the impression of motion to an audience. They are pictures accompanied by interpretive language and reinforcing music. This is true for almost all entertainment motion pictures and for some instructional motion pictures.

Photographs are symbols that present elementary abstractions, as Langer says, "in the way ordinary sense experience is understood." Nonetheless, photographs are symbols, and they are always intended to symbolize a meaning which has already been "seen" by the photographer or the director.

Music is also a symbolic form. It articulates meanings frequently difficult to express in language or in photographs. It symbolizes moods and feelings, emotions and tensions. The fact that we can "know" but cannot always name the moods, emotions, or tensions conveyed by the music is, in itself, evidence of the symbolic character of music, and of its ability to communicate meanings which are non-verbal.

* Throughout this paper, superscript numbers will be used to refer to the NOTES which are presented on page 19 and following.

Language, on the other hand, is a symbolic vehicle of thought and of reason. It is an instrument of naming and conceiving objects, and of combining and manipulating concepts and propositions. Language symbols are conceptual and discursive. They are used to express and communicate the results of the higher intellectual processes. Language is also a vehicle by which these processes are carried on.

Motion pictures combine all three of these symbolic forms. It is from the use and integration of these symbolic forms, and from their richness of cues to meanings already formulated by individuals of the audience, that motion pictures derive their enormous potential power to influence behavior.

None of these symbolic forms can convey all meanings. Each can convey, or communicate, meanings on different conceptual levels and of different qualities. We may state the general function of each of these symbolic forms somewhat as follows.

Photographs communicate situational meanings.
Music communicates "emotional" or "affective" moods.
Language communicates discursive or abstract meanings.

When we recognize and understand the different communication functions of these different symbolic forms and achieve and integration of them, we can then produce an intelligible, predictable pattern of effect.

## A. Photography as the Dominant Symbol

Of the three symbolic forms of (1) photography, (2) music and (3) language, it seems to me that photographic symbolism is theoretically dominant in a motion picture. Musical symbolism reinforces emotionally, and language symbolism names, explains and interprets.

1. The Plow and The River. In my opinion, the two documentaries of Pare Lorentz, The Plow that Broke the Plains and The River, failed to achieve the greatness often attributed to them because Lorentz equated his three symbolic forms; the result was that his photography lacked dominance. On the other hand, his music and narration achieved an unusual degree of integration.

2. Huston's Film Trilogy on War. John Huston's trilogy of war films achieved greatness because he used the picture with consummate skill as his primary medium. He used his sound track to reinforce moods when the pictures could not communicate the moods effectively in their

entirety. In his Report from the Aleutians, Huston taught that war was a cold, lonesome, deadly business, devoid of glamor and full of fear. The moving pictures told most of this story by themselves. Musical background was subordinated entirely to the pictures, and the narration was used sparingly. In San Pietro, Huston showed that war shatters in a few days the homes, public buildings, and community services that have stood for centuries; leaves old men and women to mourn; children to build anew; and men of God to sanctify the life that remains - to attempt to sow the seeds of peace once again. This, I believe, was the "meaning" of the battle of San Pietro to John Huston who, with Jules Buck, photographed it. Combat scenes from the original version of this picture are without parallel for the degree of their realism.

In Let There Be Light, Huston used his sound camera almost exclusively as a reportorial medium. There was little reinforcing music and little interpretation by language in this film. The film showed the destruction of the human personalities by war, and the healing work of psychiatry, of occupational therapy, and of sports and recreation in restoring these personalities to health. Little mood music or interpretation was necessary for emotional reinforcement.[2]

These illustrations support the contention that photography is the major symbolic medium of the sound motion picture, and that the instructional motion pictures will be effective when the pictures, and not the sound track, are used as the primary medium. Instructional motion pictures will become more instructional, i.e., will stimulate more efficient learning, when the camera is used more intelligently, more essentially, more appropriately, and more artistically.

It may occur to someone that I have perhaps weakened the argument for more effective use of pictures, language, and music in instructional films by drawing examples from entertainment films and from documentaries produced for theatrical exhibition. This is a matter of some distress to me, too. I have yet to find evidence on the effectiveness of films produced and used for classroom instruction which compares favorably with evidence on the behavior-influencing effectiveness of films produced for entertainment, or produced by entertainment film personnel for information, orientation, or training.

3. Color and Black and White. The power of the photograph, as previously noted, lies in the fact that it presents symbols in the same terms as normal sense perception. A photograph looks like the object photographed.

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# FOREWORD

This report by Dr. Charles F Hoban, Jr., is the second in a series of incidental reports of the Instructional Film Research Program. Incidental reports are non-experimental in character. They are published because they add to the useful information related to 16 mm. instructional and informational motion pictures.

Dr. Hoban's report was originally presented to the staff of the Instructional Film Research Program on January 17, 1949. It stimulated considerable discussion following its presentation, and it has subsequently served the additional purpose of providing a useful frame of reference to which some experimental studies of the Instructional Film Research Program may be related. Further, it suggests several areas of needed experimental investigation and potentially useful hypotheses.

During the summer of 1949, when Dr. Hoban served as an Instructional Film Research Program Research Associate, he edited his original report, deleting anecdotal references to personalities, and adding notes which seemed to him desirable addenda to some of the original material.

This report makes no pretense of completeness or finality. Neither is it intended to represent the full range of viewpoints of the staff of the Instructional Film Research Program. It is, instead, a contribution to the development of what we believe to be a necessity in instructional film research, production, and use - namely, a theoretical system of communication. Results of experimental studies of the Instructional Film Research Program, and of other film research activities elsewhere, will make it possible to expand, test, add to, and modify many of the concepts and hypotheses presented in this report.

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It is an abstraction of visual form. Colors may make this more pleasant but do not necessarily add definition to the abstractions of form. They make the form richer and deeper and the reaction to it perhaps warmer, but there is room for doubt that the additional learning that comes to an audience viewing the saturated and perhaps distorted colors of available color film justifies the additional expense involved in the production of color films for general instruction. This is one of the practical problems of research in instructional films - to determine the teaching advantages of a film produced in color over one produced in black and white. Obviously, there are situations in which colors provide the basis for a discrimination, and in such cases colors belong in a film whose object it is to teach this discrimination; but, on the whole, colors have been used indiscriminately with reference to the subject matter of the film. The purpose of the use of colors in instructional films has apparently been to increase audience attention and, perhaps, feeling tone.

4. Graphs and Photographs. Another problem in instructional photography is the difference between photographs and graphs, and photographs and animation. Graphs and animations, except the most elementary animations that actually reproduce visual form, are not photographs and do not symbolize situations as they are ordinarily perceived. They are line symbols representing the relationship between two abstract variables. While the same physical device of the motion picture camera is used to photograph graphs and animations and the same projector and screen to present them to an audience, graphs and animations are entirely different symbolic forms than are photographs. Many instructional film producers seem to assume erroneously that the presentation of graphs on a screen somehow endows the graphs with the same communicative qualities possessed by photographs.

As a matter of fact, an audience cannot understand a graph shown on a screen unless the audience can already read graphs and unless it already has an extensive knowledge of the relationship presented graphically. College students must be taught to read the charts and graphs. Putting these graphs in motion on a screen neither teaches them to read the graphs, nor makes the relationships any clearer if the students have not learned to read them.

5. Cartoons and Photographs. A third photographic problem is the use of cartoons for instruction. Here again, there is a departure from the symbolic function of the photograph. Despite the fact that the animated cartoon is popular with general audiences, the value of the cartoon in direct realistic instruction is open to question.

I doubt that many people have been converted to intercultural tolerance, or even to a disposition toward racial tolerance, by the CIO's cartoon, Brotherhood of Man, or that many GI's were deterred from picking up a booby trap by the screen antics of the cartoon character, Private Snafu, in the Army's film Booby Traps. On the other hand, such cartoons may have some therapeutic value. There may be a release of some deep conflict or some sense of guilt in watching the cartoons of exaggerated human weakness and human foolishness. It may be soothing to be assured by a cartoon that there are others worse than you in this sorry world.

This is a problem for research, to determine the instructional values of cartoons, their therapeutic values, and the relationship between such therapeutic values and instruction. The least we can be sure of is that cartoons involve a different symbolic form from photographs; that their moral lessons are more or less allegorical; that they dramatically exaggerate whatever they show; and that they do this in such an extreme way that they can be viewed without the logical restraints which ordinarily are imposed on audience credulity.

## B. Music Symbolism

The problem of using music in instructional films is not particularly acute, in one sense, and quite acute in the other. Fortunately or unfortunately, the sound motion picture used for instruction has been developed to a great extent in disregard of the development of the entertainment film. The "silent" film of the pre-Jolson days was never musically silent. From the beginning, musical scores were written to accompany feature films. A movie house was in the first class when it boasted of its orchestra, and the nickelodian was a nickelodian as much because of its piano-player as because of its Pearl White serials.

1. Objections to Music in Instructional Films. The instructional sound film developed as a "talking" film, not as a sound film, and this line of development has been preserved unchanged until recently. A strong feeling has been widely expressed that music has no place in instructional films. There is even opposition to beginning and end music in films, despite the sheer utility of introductory music to the projectionist in setting the sound level of his amplifier. Without such a device the narration commences either as a whisper or as a thundering shout.

This blanket objection to music in instructional films is indefensible. It is made in apparent opposition or ignorance of the legitimate function of the film in communicating

feeling and emotion - a function recognized very early in connection with feature entertainment films; or it is made in ignorance or disregard of the role of feelings, emotions, and attitudes in reinforcing learning.

Probably the objection is based, at least in part, on the improper use of music in theatrical and instructional films. Entertainment film producers have an irrational dread of any silence on the screen. They use music simply to eliminate silence more often than to reinforce the meanings of the pictures. In non-theatrical films the musical score is frequently mixed with the narration and the dialogue; on the feeble sound reproduction facilities of the 16 mm. classroom projector the music and the narration fight each other, or both may unite to oppose rather than reinforce the pictures.

2. A Case of Musical Contradiction. It is difficult to recall off-hand many instructional films produced for the classroom in which a serious attempt was made to use music for emotional reinforcement of the picture content. In Irish Children, Irish folk tunes are played on an Irish harp intermittently throughout the picture, and, interestingly enough, the narration was done with a genuine western Irish brogue. It is of interest that this film has been rejected in some cases because of the unhappiness it portrays, despite the dulcet charm of the harp and the folk tunes. Throughout the film the children, their parents, playmates, grandparents, and neighbors are unsmiling. Contrary to the general reputation of the Irish for their wit and their good humor, the Irish in this film are an unhappy people, without spontaiety, without outward manifestation of joy, beaten by bogs and fogs and stones and by the dominating and hierarchical roles of the older generation. The pictures deny and conflict with the moods of the music. Yet, the pictures are true, and so is the music; but I think the music is less true in its interpretation of the people of Western Ireland than are the pictures.

## C. Language Symbolism

Perhaps the three greatest abuses of language in instructional films are (a) the neglect to name things clearly and to name all the things the audience needs to have named; (b) the tendency to interpret relationships on a higher conceptual level of abstraction in language than is supported by the photographic presentation; and (c) the tendency to make too much use of language in narration or dialogue.

1. The Importance of Language with Films. However, we should admit from the beginning that language has an important role in motion pictures and that pictures without language are generally less effective than pictures with language. Language conceptualizes experience, and conceptualization is the highest process toward which instruction is directed.

No matter from what viewpoint we approach the problem of the relation of language to pictures, we are confronted with experimental evidence that language increases comprehension from pictures. Studies in which films with and without titles, with and without commentary, and with and without prior introductory language experience have been compared have consistently supported the proposition that language facilitates learning from films.

Some great motion picture directors have a genius for producing motion pictures in which the pictures tell the story and language is held to a minimum. Robert Flaherty's unparalleled Nanook of the North uses a minimum of language. Flaherty is master of the camera and uses it with unsurpassed narrative effect. Even in his most recent Louisiana Story, Flaherty employs language frugally, but effectively. John Ford is another director who tells his story with the camera and minimizes dialogue. It was because of Ford's mastery of camera and direction that Stage Coach and The Informer achieved greatness.

2. Abuses of Language in Films. You get a good idea of some of the skill developed in the use of language in films by comparing an instructional film produced this year with one produced 10 or more years ago. In the older films, the narration was dense and rapid. It seems as if film-makers, having found their voice, felt compelled to use it furiously.

Another fault of instructional films slowly being overcome is the use of pictures as the backdrop for language. Many instructional films produced in the past were little more than illustrated lectures in which the lecture was highly condensed, and the pictures more or less an interference.

Perhaps the greatest fault of language use in instructional films is the tendency to intellectualize the pictures too quickly in language, rather than to leave intellectualization to the audience after time for reflection and analysis. The film is so new as a medium of communication, and language is so old and has acquired such an unmeritted instructional prestige, that instructional film-makers have yet to learn how to blend words and pictures, and how to use each most effectively, so as to increase the learning values of films.

## D. Richness of Symbolic Cues

When it is evident that pictures, music, and words are all

symbolic forms, and that we react to them as symbols, it becomes increasingly clear that the power of any medium of communication to provoke audience reactions is determined by the richness of the symbols, or perceptual and conceptual cues, employed in the medium. The more cues to meaning that are included, i.e., the greater the variety and relatedness of the symbols used, the greater the response of the audience to the medium, other things being equal.

It has been axiomatic that the power of the motion picture lies in the fact that it is "visual" and that it "portrays motion." In one respect, this is correct and in another it is not. If the sense of sight and the element of motion were the determining factors of the power of the motion picture, we would be hard put to "explain" the power of radio, or the power of the press, neither of which appeals to the sense of sight, as such, or "portrays motion."

1. Invasion from Mars. It seems to be agreed among radio producers that the "secret" of Orson Wells' Hallowe'en party in 1938, when he presented the nation with his version of his namesake's War of the Worlds over the NBC network, was not that the program was presented via the radio or that it employed words as a medium of communication, but that Wells employed a large number of symbolic cues which convinced the audience that the broadcast, and hence the events reported on the broadcast, were authentic. His "on-the-spot" reporting technique, learned by the audience during the preceding "Munich Crisis," the skill of the special reporter in simulating the revulsion of horror in Herbert Morrison's radio report of the "Hindenburg Disaster," the sustained use of "Clair de Lune" as a piano fill-in during program "Interruptions"--these symbols and many others which the audience had "learned" in prior radio listening and other experiences contributed to the power of that radio program.

## E. "Double Exposure" to Instructional Media [3]

So far, we have considered only the symbolic functions of photographs, music, and words in motion pictures, and have drawn the inference that it is the richness of symbolism employed in instruction (or entertainment) that gives instruction (or entertainment) its power to influence its audience.

Let us turn to another aspect of the problem of instruction. Until recently, the problems of the newer media in instruction were stated in such terms as, "Do students learn more from movies than from reading, than from lectures, than from demonstrations, etc?" "If so, how much more do they learn, and how much time do they save?" These questions

are asked in such a way that the answer is likely to be instructionally unsound. No matter how much more students learn from this or that medium, how much longer they retain this learning, or in how much less time the learning takes place, the answer to this type of question logically leads to a conclusion whereby one medium is substituted for another. If it can be shown consistently that pupils learn more from watching movies than from reading books, it follows logically that to learn more they should see more movies and read fewer books. Instructionally, we are not quite happy with such a logical conclusion. Suppose, then, that we search for a better solution in other questions.

1. Films Plus Books. The evidence from investigations of learning from both films and books indicates that pupils learn a great deal more when they both watch movies and read books on the same subjects. One of the significant outcomes of the study of sound motion pictures in science teaching conducted by Rulon is that when subject matter is presented in both film and in text, there is a 55 percent superiority in retained learning (after 3 1/2 months) among those students who studied film and text over those who studied the text only. On materials presented in the text alone, the film-text group and the text-only group were equal in retained learning, although the text-only group was superior to the text-film group in immediate learning. If this finding can be generalized (and there is related evidence supporting such a generalization), it appears to be enormously significant of the fact that "double exposure" in instructional media is a key to the efficiency of instruction. It is also significant, as Rulon himself pointed out, that such superiority as is immediately evident in those learnings derived from books only is lost over a period of time.

2. Films Plus Instructor Introductions. This subject of "double exposure" to instructional media is a fascinating and a fruitful one. We see its influence in the learning effect of a preliminary talk prior to a film showing. Not only is there an appreciable increase in learning of the material covered in the talk and in the film, but also in the material covered in film only. The effect of "double exposure" appears to radiate beyond the material presented in both the talk and the film to influence the learning of material presented in the film only.

While it is obvious that there are some things that cannot be efficiently communicated in films, as it is evident that words are weak carriers of other subjects, it begins to appear that prior analysis and good sense will reveal those areas in which films are good communicators and those in which words are good communicators. And so on for

slides, and demonstrations, and maps, and the like. But it is to pioneering research that we must look for the answers on the questions of combined or integrated media, the increment in learning that comes through combination, and the optimal combinations.

## II. THE DYNAMICS OF LEARNING FROM FILMS

A second consideration in our thinking on instructional films is instruction. It has been implied throughout the previous discussion that instruction is the arrangement of the environment so as to stimulate efficient learning. Instruction and learning are related as cause and effect.

Instructional films will instruct best when they are produced and used so as to conform to the dynamics of learning, a subject not too well understood even theoretically, and poorly understood practically. Four factors in the dynamics of learning will be examined briefly in relation to instructional films: (a) context and novelty, (b) feeling tone and rewards, (c) identification, and (d) closure.

### A. Context and Novelty

Langer points out that all discourse involves what may be called respectively, context and novelty. The effect of familiarity on various aspects of behavior has been pointed out by several investigators. The bearing of familiarity on the problem of learning from films lies in the need to have familiarity in the context of the material presented in the film, and novelty in the doctrine or in the interpretation of the context. It is the old problem of figure and ground in which the ground be familiar and the figure novel.

The educational film producer has peculiar problems to face in this matter of context and novelty. From a learning point of view, there must be a maximum of context (familiar elements or background) and not too much novelty (unfamiliar interpretation or unfamiliar material). There must be novelty or there will be very little learning. On the contrary, learning may be blocked by context which is too new or too difficult.

1. Audience Ego Demands. An audience-demand or expectancy exists among students for material which has the "appearance of novelty"; otherwise, students feel that their learning ability has been underestimated. Students

have certain ego-needs that arise out of their status as students. They need to feel that the teacher (film maker, pedagogue, or both) has a high estimate of their learning ability and that the material presented to be learned is commensurate with this ability level. They demand "challenge" in their instruction. To achieve the delicate balance between context and novelty that is essential to learning, and to preserve the "appearance of novelty" so essential to the ego-demands of students, may involve considerable instructional legerdemain on the part of the film director. On the basis of limited observation of the behavior of students in late adolescence and early adulthood toward films, it is better than a pure guess to predict that films will have their greatest power to stimulate learning when they appear to present a great deal of "new" or "novel" material, and when they are so rich in familiar material that the dominance of the novelty is more apparent than real.

2. Film-Habit Demands. Another problem of context presents itself in the instructional film. There are actually two contexts that must be reconciled or compromised - the context of instruction and the context of films. The context of instruction involves certain audience demands in the style of subject matter presentation. Among these demands are (a) specific factual information, (b) a logical arrangement of the content under major and minor headings, and (c) the presentation of this arrangement in such form that it permits note-taking. While the educational philosopher is probably correct in associating learning with living, the student often feels that his tuition should be refunded when his instructor acts out this doctrine in the classroom.

The context of films is quite different, since films are more familiar as media of entertainment than as media of instruction. Consequently, the student-demand in instructional films involves not only "instructional" demands but "entertainment" demands. These two contexts, then, must be compromised for most effective learning from films, so that the instructional film contains the qualities of both "instruction" and "entertainment," with the balance slightly in favor of "instruction" but not excessively so. Except in advance specialized instruction, the film will teach best when it also entertains.

## B. Feeling Tone and Learning from Films

It is a remarkable fact that the qualities most characteristic of instruction, and of the instructor's self-estimate as a scholarly figure in the academic world, are frequently the very qualities least effective in their positive influence on learning. Equally as remarkable is the fact that it is these qualities which have been incorporated into instructional films, rather than the qualities which are much more effective in accelerating learning.

Of the three qualities of instruction (a) pleasantness, (b) unpleasantness, and (c) affective neutrality, the latter is least effective in stimulating learning. Pleasant feeling tone is most influential on learning, and unpleasant feeling tone is less effective, but more effective than emotional neutrality.

Suppose we say the same thing another way. Rewards are most effective in reinforcing the behaviors that are rewarded. Punishment is less effective in reinforcing behaviors punished, but still effective. Neither reward nor punishment, but simple absence of reward or punishment, is least effective of all.

1. Instructional Heresy. There is a great deal in instructional heresy in this doctrine, but the doctrine is quite respectable psychologically, and it is well documented by the results of experimental research.

The quality of instruction characterized by absence of pleasantness or pain, by the absence of rewards or punishment, is the quality which non-teachers refer to as "dull." It is a quality universally attributed to the training films produced by the armed services during the early part of the war training period, and it is a quality generally attributed to instructional films produced for school and college use.

There are several ways we can improve the pleasant tone and the reward experiences in films. Music, when properly employed, is one of these ways. Touches of humor constitute another. The voice and tone of the commentator is a third.

2. Audience Participation.[4] The value of audience participation in a film showing needs further investigation. The reports of studies of its effectiveness are encouraging. The psychological value in audience participation during the showing of instructional films is probably attributable to the reward value of such participation, rather than to the participation itself. The audience which makes some overt response to a question asked in a film "gets in the act," so to speak, and becomes a part of a group response. This experience is satisfying. It flatters the ego. It expands the personality. It is, in this sense, rewarding. For another thing, the audience is likely to make the "correct" response to the question asked by simply having observed the film. Making the correct response, and then learning that the response is correct, is rewarding. Rewards reinforce learning.[5]

3. Implicit Flattery of Audience Participation. To the extent that audience participation can be woven into instructional films in such a way as to "challenge" the response, and to provide rewarding experiences, i.e., to insure the probability of "correct" response and of knowledge of the

"correctness" of the response, it is likely to improve the instructional quality of a film. Even the implicit flattery of inviting the audience to respond, and the "protective" nature of a group response, are sufficient to justify experimentation in its use and to predict its probable positive effect on learning.

We are at least certain that pleasantness, rewards, and knowledge of results are important factors in a learning situation, and hence are factors which should be incorporated in instructional materials and procedures. We know very little about these factors in instructional films since up to this time there has been little experimentation in their use.

## C. "Identification" in Films [6]

We are indebted to the Freudians for the concept of "identification" and an emphasis on its role in the dynamics of behavior. Perhaps because the concept is Freudian, or associated with Freudian psychology, we have not fully considered its relation to the dynamics of learning. However, there is increasing evidence that what we may loosely call "identification" is one of the major factors in learning, and that its deliberate and systematic use in instruction can and does increase the efficiency of learning.

"Identification" involves a number of psychological mechanisms, two of which are called projection and introjection. Much of the appeal of the popular novel, the popular movie, and the Hollywood star system, is based on the mechanism of projection. It is perhaps because we have tended to limit our concept of "identification" to that of projection that we have not been more conscious of the effect of identification on learning and of the enormous possibilities of its use in instruction.

It is in the mechanism of introjection, i. e., the taking on of the qualities of personality and the behaviors of a person we admire, that identification becomes such a potent factor. If we can make use of this mechanism of introjection in our instructional materials, we can increase their potency.

1. Cues to "Identification." The motion picture is a medium exceptionally susceptible to the employment of "identification." There are so many possible cues to identification in pictures - familiar places, familiar things, familiar people, group membership, class status, gestures, grimaces, body stance, physical appearance, manner of dress, age, sex, voice, language - all these are cues to "identification" of the audience with the people, places, things, and activities shown on the screen. It is because of the richness

of photography in identification cues that the moving pictures are dominant, and that narration and music subordinate.

2. Introjection and Motivation. The major problem of instruction is not so much to show an audience how to do something or what something is like, but to stimulate the audience to want to do that something, and to accept the importance of that something. We have tended to overlook this fact and have concentrated our instruction on the doing and the knowing, rather than on the wanting to do, the wanting to learn. Motion pictures, of course, do show how to do something and what something is like, and how it moves; but much more important for learning, they can, through the mechanism of "identification," motivate the learning that is desired.

In general, people want to so something a certain way because either that is the way the people they love and admire do it, or because it is a means to becoming like some person they love and admire. As people grow older, and as students progress in school, they tend to "identify" with a certain occupation or with a certain subject, because that occupation or that subject has become "identified," i. e., equated, with a goal that has been accepted as "an ideal of the self." It seems to be generally agreed among psychologists that the "ideal of the self" is learned, and that it has been "identified" with the persons who have been loved and admired in childhood and youth.

3. Instructional Value of "Identification." Reactions to instructional films are theoretically conditioned to a great extent by this process of "identification," and by the motivating force involved in "identification." We can greatly improve the quality of our instructional films if we give as much attention to "identification" with the subject presented in the film as to the clarity of the presentation of the subject visually, to its reinforcement with music, and to its interpretation with language, although both of these latter are also elements of "identification."

Thus, if we are to present a "nuts and bolts" subject in a film, it is quite as important, if not more so, to provide for the "identification" of the audience with admirable characters performing the "nuts and bolts" operations as it is to display these operations with invincible clarity. If the audience doesn't want to learn about nuts and bolts and doesn't identify nuts and bolts with something significant, the instructional value of the film will theoretically be diminished. If there is to be introjection of the subject, there must be projection of the audience into that subject or into somebody or something connected with the subject that makes it worth-while in the first place.

## D. "Closure" in the Use of Instructional Films.

"Introjection" implies "closure," since we take on qualities or forms of behavior in order to establish some kind of an equilibrium. As we are aware, "closure" is the term used to describe the compulsion to finish unfinished business, to complete a task. It is the filling in of missing items. It is the achievement of completeness.

All of you who have read my little volume, Movies That Teach, are aware of the thesis that an instructional film, to be instructional, should leave some things undone that need to be done, i.e., should leave the audience with the feeling of necessity of further effort and personal responsibility for carrying the subject further, for putting it in practice, or for seeking additional light.

1. Fallacy of Films in Film Forums. The film forum movement is based on this concept of "closure." People are supposed to assemble in a public place, to be shown a film on an important topic, and to sit (or rise) and discuss this topic. Supposedly, the presentation of the film arouses an unsatisfied need for audience reaction, discussion, and action of some kind. Supposedly, the subsequent discussion leads to more enlightened behavior with reference to the subject presented, and the aroused need is thereby partially satisfied.

Despite the extraordinary efforts of a great many people and the moral encouragement and financial support philanthropic foundations have given to this film forum movement, it has not been a spectacular success. The reason for this, I think, is that the films available for film forums have, on the whole, prevented the very reaction they were intended to stimulate. On the contrary, they closed the subject. They left little to discuss, they introduced no controversy, they set forth the doctrine without doubt or reservation, and they either convinced the audience or left it untouched.

The amazing lack of effectiveness of the "informational" film as a provoker of discussion is no better illustrated than in the experiment in Canada of adding a discussion sequence to the film itself in the hope that this discussion sequence would provoke the audience to similar discussion. Psychologically, this technique is likely to have closed the subject even further.

2. Instructional Films That Do Not Satisfy. Instructional films are likely to be more instructional when they present their content in such a way that the audience is left with unfinished business, and has been provided with sufficient information so that it can bring this business to some kind of a satisfying conclusion.

This is an unhappy thought, perhaps, for those instructors and those instructional film producers who "know all the answers" and whose notion of instruction is to transmit these answers to an awed and respectful audience. When we remember that all learning involves individual effort and discovery, that it must be motivated, that it is produced under initial frustration, and that it thrives on rewarding experiences, we will employ the principle of closure in producing and using our instructional materials for the simple reason that it is a part of the dynamics of learning.

## III. THE ARGUMENT IN BRIEF

My contention in the opening paragraph of this report was two-fold. First, motion pictures are not simply "movies," i. e., pictures which convey the impression of movement when projected on a screen. Instead, pictures involve a range of symbols, each of which has a somewhat unique function in the communication of meanings. For the communicator, a symbol expresses the meaning a situation or an idea has to him. For the audience, it is a cue to a meaning which this situation or idea has to the individuals constituting the audience. A symbol becomes a "medium of communication" when there is an approximate identity, or an overlapping of identity, of the meanings "expressed" by the communicator and those "aroused" in the audience of individuals.

The power of motion pictures lies in the range of symbols that can be employed and in the degree of their integrated expression of meanings. We can improve the effectiveness of motion pictures in instructional communication when we understand the functions of pictures, language, and musical symbols, and develop skill in using these symbols, both uniquely and in reinforcing patterns, as appropriate. It goes without saying that this is more easily said than done, but it also goes without saying that it will be more easily done when said.

My second contention was that certain principles operate to facilitate or to impede learning. Instruction is the arrangement and administration of learning situations. The effectiveness of instruction may be expected to improve when learning situations are arranged and administered so that basic principles of learning are used to facilitate learning.

In actual practice, instruction often is conducted with a neglect of facilitating principles of learning. Not infrequently, these principles may operate in instructional situations in such a way as even to impede learning. Obviously, the ineffectiveness of this type of instruction is not deliberate, no matter how operational the ineffectiveness.

Instructional motion pictures, i.e., motion pictures which involve the prearrangement of learning situations so as to facilitate learning, will be most effective when they are produced with thoughtful use of principles that facilitate learning. The least we can all agree to is that instructional films should not violate facilitating principles of learning.

Underlying the preparation of this report has been the hope that some of the discussion will serve to stimulate (1) experimentation in production of instructional films along some of the lines suggested, and (2) research into the application of the principles discussed so that we may be more certain of their validity, their limitations, their interrelations, and their omissions or errors. If this report stirs up no criticism, no dissention, no experimentation, no research, it will have failed in its purpose.

1. Conceptual Framework of "Media of Communication." I am indebted to Susanne K. Langer's Philosophy in a new key (Harvard University Press, 1942) for much of the conceptual framework of this discussion of symbolic media employed in sound motion pictures.

In discussing the symbolic nature of motion pictures, it is convenient to use Langer's meaning of a symbol as something used to represent something else.

It is also convenient to distinguish between media of communication and devices used to transmit and distribute these media to large audiences. Since all communication involves the transmission or stimulation of meanings by means of symbols, the media of communication are properly the symbols transmitted rather than the devices used to transmit the symbols. As noted in the body of this article, communication symbols are pictures, language, music, gesture, etc. Radio, television, the press, the film and the projector are the devices used to transmit or distribute pictures, words, music, etc., to audiences. Application of the term "mass media of communication" to the transmission devices of radio, press, film, and television is somewhat confusing since none of these is properly a medium of communication, but a physical device for transmitting available symbolic media.

Because of the attention devoted to the devices rather than to the symbols, research in media of communication has suffered in the past from a stagnation of problems investigated.

a. In the formulation of studies, research has been directed toward establishing the potency of one transmission device over another; thus, the perennial question of whether radio or press has the greater audience influence, radio or television, movies or television, radio or movies, etc., etc.

b. This trend, in turn, diverts research away from the really crucial problem of the subject content, the symbolic media employed, and the techniques utilized in programs transmitted by radio, television, or film so as to increase the potency of program effect.

c. The problem of audience structure, i.e., personality factors that enter into audience reactions, has been neglected. The audience, like the program transmitted and the transmitting device, is treated as an abstraction, or as a series of stratified abstractions.

Facility of transmission is an important factor in any general estimate of the potency of radio, film, television, or press. The power of any transmission device is obviously related in part to the size of the audience that can be assembled in terms of the device. At least theoretically, however, the ability of a transmission device to influence an audience depends on (a) the range of symbols employed, (b) the degree to which they have been appropriately integrated or uniquely used, (c) the craftsmanship of their employment, (d) the personality structure of the audience responding to the symbols and the techniques of their use, and (e) program content.

Motion pictures are a "new" medium of communication in that motion, continuity, and a new grammar and rhetoric have been added to the historically existing medium of the picture. The grammar of motion pictures is inadequately understood, as is its rhetoric. We may, superficially at least, include transitions, intercuts, content density, and rhythm, under the grammar of motion pictures; speed of development, characterization, and narrative, dramatic, expository, and persuasive composition under the rhetoric of motion pictures.

Because of their grammatical and rhetorical characteristics, motion pictures have an inherent quality of discursiveness also characteristic of language, i.e., they deal adequately with cause and effect, and enjoy a freedom in manipulating time and space. Motion pictures lack the quality of language Langer refers to as the "symbolic transformation of experience," primarily because experience of observing motion pictures as such is perceptual, not conceptual. The addition of language to the sound track of a motion picture adds this conceptual quality to film experience. Thus, motion pictures are a "new" medium of communication in two senses: first, they add motion to form, i.e., motion as well as form is perceived in the observation of motion pictures; and, second, "audio-visual" symbols are employed, i.e., picture and sound, including language and music.

Radio and recordings are purely transmission devices, employing language and music for the most part as their media of communication. Television is also a transmission device. It is capable of transmitting, with the extraordinary facility of radio, all the symbols and most of the techniques employed in motion pictures. Theoretical distinctions between motion pictures and television are, therefore, limited to considerations of technical transmission and scheduling, and audience density, structure, and viewing habits and conditions. In the communication media (symbols) employed, television and film are theoretically identical.

These distinctions are, it is believed, useful in the formulation of a rationale of motion pictures and related devices in instruction.

2. Huston as a Moral Philosopher. Huston's first post-war picture, The Treasure of the Sierra Madres, was acclaimed by film critics and he was awarded an Oscar for it by the Academy of Motion Picture Arts and Sciences. His two later productions, Key Largo and We Were Strangers, were appraised by the critics in a restrained and obvious note of disappointment. As gangster movies and as starring vehicles for Humphrey Bogart and John Garfield, they were admittedly disappointing. However, when critics imply that these two films are out of character for Huston, and beneath the summit of his story-telling talents, there is an apparent oversight of an important factor in Huston's character. I don't believe for one minute that Huston is the slightest bit interested in telling fascinating stories on the screen. The fact that The Treasure of the Sierra Madres was a fascinating screen story, and that Huston's kudos came in the wake of this fact, is, I believe, a matter of complete indifference to him.

John Huston is a tough moral philosopher. One need not agree with his philosophy to recognize the fact of its existance and its dominance in his motion pictures. I don't know how much of a moral philosopher Huston was before the war, but his three war films establish, beyond possible doubt, this identity. From the Aleutians, up through the Italian peninsula, to the psychoneurotic wards of Army hospitals, war was morally wrong to Huston; and his films stated, or at least strongly implied, this conviction.

Greed is morally wrong, and Huston said so in The Treasure of the Sierra Madres.

Racketeering and gangsterism are morally wrong and Huston said so in Key Largo.

Tyranny is morally wrong and Huston said so in We Were Strangers. Moral wrongs are sometimes temporarily overcome, as in war, by machine guns and dynamite. The method of righting a moral wrong may, in itself, be morally wrong. But such methods are used, rightly or wrongly. Huston said this too in We Were Strangers. The roaring machine-guns and hurtling dynamite in We Were Strangers, which some critics appraised as on the "corny side" and out of Huston character, are neither corny nor out of character. They were watered-down versions of Huston's experiences in the Battle of San Pietro. Jules Buck, who co-photographed Report from the Aleutians and Battle of San Pietro with Huston, was co-producer with Huston of We Were Strangers. If you know Huston's war films, his postwar films make sense. Otherwise, you are likely to confuse Huston the story-teller with Huston the tough moral philosopher. The latter is in character; the former is not. His films are parables, not plays.

3. "Double Exposure" to Print and Film. The first time I noted this term was when it was used by Paul F. Lazarsfeld and Patricia L. Kendall, in Radio listening in America (Prentice-Hall, 1948). Interesting collateral evidence on the point of the reinforcing effect of various transmission media is supplied by Lazarsfeld and Kendall in their reports of radio-listening, movie-going, and magazine-and-book-reading habits of adults. Their data indicate that patrons of any one transmission medium tend somewhat to be patrons of the other transmission media, and that abstainers from one tend to be abstainers from all. In other words, people who read few books, don't listen to the radio regularly, or go to the movies often.

Full report of the study of the integrated use of films and textbooks may be found in Phillip J. Rulon's The sound motion picture in science teaching (Harvard University Press, 1933).

4. Research in "Participation." Published studies of "participation" in films include one reported from Army research by Carl I. Hovland, Arthur A. Lumsdaine, and Fred D. Sheffield in Experiments on mass communication (Princeton University Press, 1949), and one reported from the Yale University film research program in Educational screen (May, 1947).

5. Repetition and Reward. I am reluctantly forced by the weight of experimental evidence to admit, at long last, that the practice effect of participation, independent of its reward values, apparently plays an important part in film learning. I have resisted accepting repetition as an element of film method largely because I have believed that the quality of poor instructional films did not improve with repeated use. However, repetition per se apparently increases the effectiveness of instructional films - good or poor. My enlightenment on this point does not involve retraction of possible effects of any rewards involved in participation. It simply means that the weight of the evidence supports the position stated so well by S. M. Corey on several occasions. Corey's point is that you learn what you practice. If and when film learning involves practice, this practice effects learning.

6. "Identification" and "Involvement." There has been a general acceptance of the concept of "involvement" rather than that of "identification" in the thinking of the Instructional Film Research Program staff. The concept of "involvement" has several advantages over that of "identification." It is more inclusive. It does not rest on Freudian assumptions. It is susceptible to experimental measurement by means of existing measuring instruments. It does not imply a life

history of every subject in the audience. The term "identi-cation" is retained in the body of the report, however, without necessary dependence on Freudian origins or usage, and in the expectation that it will be replaced in the future by the term "involvement."