



Effective Learning in Nonformal Modes¹

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Regardless of the current wave of worldwide interest in the topic, *nonformal education* seems to be, a non-descriptive arbitrary term. “Nonformal” relates more to the motives of education rather than the modes of education. From place to place “nonformal” education uses virtually the whole range of instructional procedures used in formal education. When education is carried out by the organizations or agencies that are already established or recognized as “educational” (for example the Ministry of Education or the University), we tend to think of the education as being “formal.” When the education is carried out by organizations or agencies that are not primarily committed to operation of educational institutions, the efforts are said to be “nonformal” education.

But such a distinction is most unfortunate. Procedures used in nonformal education are no less apt to be pedantic, restrictive and rigid merely because they are sponsored by an agency not ordinarily in education. Further, it does no justice, to the important procedural innovations being used by educational establishments to label them as being “formal” with no regard for their nonformal mode. Some of the most important innovations in education during this century have come about through the experimentation that formal institutions have done in developing truly nonformal modes of education. The significant expansion of cooperative extension services (as in rural and community-life education in the U.S.), adult education in many parts of the world, “radio classes” (as in Australia, Columbia, India, and Italy) and other expansions of the efforts of ministries of education to broaden public education through mass media of communication are contributions of the “formal education” sector to the development of nonformal modes. Thus the arbitrary distinction between formal and nonformal education is unfortunate to the extent that it results in a diversion of attention from the central issue of effective learning.

Perhaps today the sides are drawn, as if to battle, because of the charges of ineffectiveness and inefficiency against the establishments of formal education. Such unfortunate polarization of “good guys” and “bad guys”, after the style of cheap American movies, tends to obscure the more vital issues. The most important need today is for effective learning, regardless of the sponsorship of the educational operation and regardless of the label “formal” or “nonformal” that may be attached to it.

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Fad or Honest Search?

There is very little inherent difference between effective learning in nonformal situations and effective learning in formal situations. In contrast with both formal and nonformal learning, *informal* learning is most apt to be different, since informal learning is likely to be “unconscious” in the sense of incidental and non-intentional (so far as the learner is concerned). For example, learning of one’s mother tongue is mostly gained through informal learning situations. For the infant in the family and a child in the neighborhood, informal learning begins long before the day that formal or nonformal education begins.

Occasionally we need to be reminded that schools do not make people learn. Schools may *help* people learn; certainly schools can provide opportunities for people to learn; and schools can even help people become more *interested* in learning. But schools in general, are a way to bring people together with educational resources. Whether or not the people learn and what is the value of what they learn are issues sometimes overlooked. It is not enough to build schools. It is not enough to provide teachers. To assure effective learning demands that ends and means (goals and procedures) be aligned with significant values of the society.

Effective learning depends on 1) relevancy of the educational goals to social values, 2) accommodation of the cognitive style of learners, 3) accommodation of the pedagogical expectations of the learners. Thus those who are concerned about effective learning (Whether the educational setting is formal or nonformal) must evaluate the relevancy of the educational experiences to social values. They must also be careful to select procedures and methods that are appropriate both to the goals and to the nature of the learners.

Whether or not the current wave of interest in nonformal education is a fad is a legitimate question. Education in the twentieth century has manifested the same volatility and instability as characterize most other institutions. The advent of the communications revolution has aggravated the already unstable situation: the pendulum swinging from one extreme of philosophy and methodology to another is now accelerated but shows no new signs of coming to a definitive rest position. Thus the newly dramatized term “nonformal” may add little clarity to an already confused situation. If we are engaged in one more semantic exercise or one more attempt to find utopia through putting new labels on the status quo, then the excitement about nonformal education is indeed a fad. Our experiences with those who are seriously concerned about nonformal education has led us to the conclusion that the phenomenon is neither trite nor futile. But the term “nonformal education” leaves out the key word *alternatives*. Those who are seriously interested in nonformal education usually express their concerns in terms of needs for alternatives to otherwise overly-costly or unresponsive and anachronous formal systems of education. Thus the issue is rarely the degree of formalness of the educational operation, but its costs and its objectives-reaching performance. “Nonformal education” is a rather non-descriptive collective term thrown over anything and everything in which people who seek educational *alternatives* are or might be interested. Thus the technologies of formal education may be employed in nonformal education—to the extent that they can be used to reach different objectives and reach them at lower costs. The pedagogies of formal education may be appropriate for nonformal education—to the extent that they can enable the reaching of new objectives and at lower cost.

Many of those most clearly identified with the search for nonformal alternatives in education are “angry” people. Some are frustrated over the tendency of formal education to enrich and perpetuate elitism within their societies. It is charged that such educational systems do little or nothing to solve

the problems of massive ignorance, poverty and isolation from the determination of governing authority and human destiny in general.

Others have more specific criticisms of weaknesses of the “establishment” that they would attempt to relieve through alternative ways and means in education. Thus for example, those reformers who object to the alleged depersonalization and irrelevancy of American education find themselves in company with the educational revolutionaries of South America, Africa, and Asia whose major concerns are substantially different. The kinship of reformers and revolutionaries derives primarily from the fact *that* they are all seeking alternatives—for somewhat different reasons, toward somewhat different objectives, and using essentially different means.

Malcontented persons from many different countries, representing various degrees of urbanization and modernization identify with one another in terms of their quest for alternatives to the contemporary western-style institutionalized education. This fact *constitutes* one of the stronger replies to the charge of faddism. “Nonformal education” may be a faddish *label*, but the earnest quest for lower cost alternatives to the use of educational procedures and resources to enhance the condition of the family of man is substantial.

In summary, the need for effective nonformal education is usually expressed as a need to find alternatives. The alternatives are needed because of one or more of the following:

- 1) To bring education to people who are not being reached by the formal educational establishment,
- 2) To provide education at lower cost, or
- 3) To direct educational objectives toward goals that are more practical or more closely related to the learners’ needs within their society.

Increased Effectiveness Through Systems Development

The frontiers of research in human learning are concerned less with the science of the brain than with the understanding of learners and environments for learning. The mysteries of mental processes remain stubborn, but improving the technology of instruction does not depend on understanding how the brain works. Further, as typically used in reference to nonformal education, “effectiveness of learning” relates primarily to those pragmatic issues indicated earlier as need to reach other populations, need for lower costs, or need to achieve different goals. Important steps forward have been made possible by combining the procedures of system analysis with refined insights into learners and environments of learning. The procedures of systems development, when applied to educational planning, typically specify the following steps. Many useful books have been written on the use of procedures of systems development for educational planning (Banghart, 1971). Within the scope of this paper it is necessary to emphasize the particular issues and problems of planning for nonformal education.

Problem I: Specify the Learning to be Achieved. Nonformal education is typically concerned with learning *that* has a high degree of “practical” usefulness. Thus the specifications of learning, as indicated in a systems development procedure, would be specially concerned with the learning in exactly the form it will be most likely applied. For example, assume *that* the practical problem for which the nonformal education is being designed is the need for operators of tractors for community farms. The training program should specify learnings as operational skills of tractor operation and tractor maintenance. The learning would be specified in terms of its practical use, not in terms of abstract or theoretical understandings. In another illustration, the learning objectives for a family

planning program would not be specified as understandings or as “knowing about birth control techniques,” but as the composite of understandings and behavior changes that represent the actual *adoption* and practice of family planning procedures.

The emphasis on practical and behavioral learning achievements is not only a concern of nonformal education. Formal education, in some countries, has undergone a similar shift in emphasis toward behavioral objectives in the past few years. But still, it is in nonformal education that the investments in education or training are expected to achieve very specific goals based on very pragmatic sorts of values.

Problem II: Describe the Target Population. The target populations for programs of nonformal education are usually rather specific and delimited. It is within *formal* education that the education-for-everyone approach has been most often applied. Indeed one of the continuing dilemmas of formal education is the need to provide educational experiences for a diverse population. If target populations are not carefully defined, the educational experiences that are designed may prove to be appropriate for only some small segment of the target population. A current criticism of American education is that in its effort to provide one set of experiences for a widely varied target population it fails to provide appropriate experiences for those whose preschool environmental background has been atypical.

One of the most important requirements for effective learning is a matching or interlocking of the planned experiences and the learners. Each proposed target population must be carefully studied and understood in terms of three major factors that vitally relate to effective learning: 1) the motivations, value systems and reward systems within which learners live and work, 2) their cognitive style and capabilities in terms of previously acquired skills, and 3) their expectations about learning and about the pedagogical environment.

It is the position held in this paper that precise description of the target population is absolutely essential for successful application of the systems development procedure for instructional planning. Since we feel that this problem is sometimes overlooked or minimized by those who plan nonformal education—a detailed specification for the target populations is presented later in the paper.

Problem III: Specify the Instructional Tasks. Jerome Brunet (1966) was among the first of the psychologists of learning to warn that teaching and learning are not two sides of the same coin. Identification and description of learning objectives is only one step; after the learning to be achieved is specified a separate task is to propose the instructional experiences that would achieve the learning. Regardless of the apparent “scientific” or technological approach to instructional systems design suggested by the “block diagrams” and “flow charts”, instructional design is a creative matter. With data about the population in one hand and the learning objectives in the other hand, a creative designer or team of designers is ready to sit down to think through the many different ways that learning experiences could be provided. The success of this step depends heavily on the degree to which the instructional designers observe the data on the target populations and the specified objectives. But there are also two other highly important factors: 1) awareness of the full range of possible instructional alternatives and 2) insights into the relevancy of the instructional alternatives to the cultural influences on the personalities of the target populations.

Specifying instructional alternatives consists of 1) identifying and/or creating (at least describing) the possible instructional procedures that promise to achieve the learning objectives and 2) making

choices among the alternatives in order to move ahead in the development of the instructional system. (It is important to recycle an instructional system in order to revise the instructional procedures--sometimes even to make other selections from among the alternatives--in order to improve the system on the basis of the data from the early evaluations.)

Problem IV: Specify the Support and Management Tasks. As soon as the first decisions about instructional tasks are made, the support tasks can be defined. For example, if it is determined that the instructional tasks are to be performed through the medium of television, the support tasks can be defined (even before the instructional materials, “software”, are developed.) The support tasks for an instructional system ordinarily involve the system “hardware” and its maintenance. Nonformal education typically goes one of two directions: 1) uses existing resources (“hardware”) and puts the new instruction through these channels with minor modifications; or 2) develops new resources to use as instructional channels. Generally, the first option is elected when the system is to be very widely disseminated; the second option is used if the system is to be more precisely focused on smaller (but perhaps widely scattered) target populations. For the first alternative, then, the specification of support tasks involves negotiations and joint planning with other agencies whose resources the instructional system will share such as radio or television. For the second alternative, the efforts are apt to be more heavily invested in preparing the support system personnel, often necessarily recruited and organized as an altogether new team. In any case, the design of an effective management procedure must begin at this point.

Problem V: Specify the Level of Performance to be Learned. The effectiveness of systems development rests less on its “scientific” nature than on its careful organization of the sequences of decision which must be made. In designing an instructional system for effective learning, it is usually advisable to make a separate step for the specifying of the level of performance to be learned. There is a difference between the learning task itself and the level of performance. The level of performance is concerned with accuracy, rate of performance, or quality level of the skill. For example, in the tractor-operation example used earlier, after it is determined what the learning task is and how it will be taught, the question remains, what level of competency will the system attempt to achieve? Since a systems development approach to instruction is usually based on a “mastery learning” model rather than a distribution of accomplishments on a “normal curve,” the important issue to be determined in this step is what will constitute the lowest acceptable level of performance for any learner. For example, the system might specify a 100% frequency for learning to “check the oil level before starting the engine,” but be satisfied with 60% frequency of performance of the learning “shut off the fuel line before leaving the tractor at the end of the day.” In matters of quality, the straightness of plowed rows might be judged to be very important or not very important. Since the next step (preparing instructional materials) must take account of these judgments about importance, frequency and quality, the specification of the levels of performance to be learned should be made before the actual design of the instructional materials. Especially in education built on the “mastery” model, it must not be assumed that all learners are to learn *every* skill to a *perfect* level of performance 100% of the time. The “mastery” model instead very deliberately establishes a set of standards that represent the acceptable level of mastery of the skills or understandings and then designs a set of procedures whereby all appropriate learners will attain these levels.

Problem VI: Prepare Instructional Materials. The preparation of instructional materials is a set of tasks that are guided by the decisions made earlier in the specification of instructional objectives and in the specification of level of performance to be learned. Nevertheless, there must be a high degree of imagination and creativity applied to this problem. As indicated in the section on Problem III,

designing instruction is a creative task in which a designer or a design team sets up a variety of possibilities and selects those that seem most promising.

Revising or adapting instructional materials that were designed for one purpose in order to make them useful for another purpose is difficult at best, hazardous at worst. Fortunately, it is common in programs of nonformal education to develop special new instructional materials. It is often very hard to adapt instructional materials that were designed for use in formal education. (The difficulties include linguistic demands, conceptual level, degree of abstraction, and basic differences in learning demands, conceptual level, degree of abstraction, and basic differences in learning objectives.) Thus it may be more satisfactory to develop new materials than to attempt to excerpt from and revise existing instructional materials.

Now that nonformal education has become a matter of worldwide interest, there is an additional hazard: inappropriate use of instructional materials that have originated in another culture (Howieson et al, 1968). Particularly from the research on programmed instruction has come evidence that instructional materials must be attuned to the culture. Especially when using the more specialized print media (particularly those that use the various forms of programmed instruction), and the visualized media (motion pictures and television), there must be an attunement between the instructional materials and two sets of factors within the culture—the cognitive style and the pedagogical expectations of the learners. Instructional procedures in general, and especially the materials for given procedures must be designed in such a way as to relate to the cognitive style of learners: even within one culture, differences in cognitive style should be accommodated to increase the effectiveness of the learning; but across cultures, where differences of cognitive style may be large, it is especially important that appropriate transformation be made.

Until recently it has been common for educators to make generalizations and to treat cognitive style too simplistically, but recent studies show that even within limited geographic areas and among people of similar ethnological backgrounds the differences in cognitive style can be very significant. For example, Hovey (1971) points out evidences of a wide range of cognitive styles within twelve societies of East Africa. These differences in cognitive style suggest that very different procedures would be necessary in order to provide effective learning.

Problem VII: Train Human Resources. The people who will operate (manage or deliver) the major instructional experiences as well as the people who will operate the support systems must be trained. Although they need not be trained together, it is necessary for the training programs to be articulated or even overlapped in order to assure *that* the various human roles will be compatible and supportive. In a thorough system design, the training programs for delivery system personnel and for the support system personnel are planned as thoroughly and precisely as is the main delivery system. Thus what is recommended here is a system—in which the personnel are analyzed as target populations, the needed skills are specified and the instructional tasks and materials for personnel training are specially designed.

Problem VIII: Design Evaluative Procedures. Inasmuch as the success or failure of an instructional system usually depends on its ability to gather evaluative data and to re-cycle its design and operation (make changes for improvement), the plans for evaluation must be completed before operating the system. The design for evaluation of the effectiveness of the system must be very thorough. In a systems approach to “mastery” learning, the evaluation procedures are based on assessing the strengths and weaknesses of the system in terms of reaching its specified objectives. Evaluation in

formal education is more often concerned with the accomplishments of the *students*; whether a student “passes” or “fails” is thought to be a consequence of [them] having “applied [themselves]” and having “worked hard.” In terms of the “mastery learning” approach, it is the instructional system, (including the input screening processes) that is under test. Thus, the evaluative procedures must include data collection (testing) at the beginning and at several points during the learner’s progress through the stages of the instructional procedures; it is important to be able to identify the exact breakdown points or weaknesses in the system *for learners of given characteristics*.

Problem IX: Operate the System. This problem is self-explanatory, except for the fact *that* in a systems approach to instruction the operation of a system, especially at the first, is a sort of trial or experiment. In the early months of the operation of a given delivery system of nonformal education, the major objective of the operation is to gather evaluative data. Thus many well-designed instructional systems begin their operational phase on a small scale, even operating under the constraints of field trials in given test-sites where the characteristics of the environment and the learners are well known. It is important that these *test-sites* be carefully selected for their equivalence to the broader populations for whom the system has been designed.

Problem X: Evaluate the Learning. The primary purpose of evaluating is to get information *that* can be used to *recycle the system*. “Recycling” refers to making changes (adjustments, alterations, corrections) in the instructional system in order to increase the effectiveness of the learning resulting from the system. In a “mastery” approach, evaluation also is used to *recycle the learner* until his or her learned performance is able to meet the level of performance specified as mastery of the learning. Especially in well-planned nonformal education, testing is highly behavioral and task oriented, in keeping with the learning specified by the system. For example, in the tractor-operation illustration, the testing program is likely not to use written examination, but would rely heavily on evaluative observations of performance. The best such tests use unobtrusive measures to gather data rather than making the learner conscious of being evaluated.

Basic Questions for Planning

In simplest terms, learning can occur when educative experiences are brought to bear on a learner. But learning always occurs in complex environments. No simple model of learning is adequate for purposes of instructional design. The planned educational experiences are but one part of a more complex universe of experiences in which the learners themselves are a contributing part. Further, the learning results from the interaction of the *deliberate* educative experiences, the universe of environmental influences, and the learner as a unique personality.

Identifying all of the significant variables within this model of learning is obviously impossible. Thus it is necessary to decide which factors are the most important and to plan well for their development. What questions about the target population do educational development planners need to answer in order to plan nonformal educational ventures that are *alternative, less costly* and *effective*? Following is a suggested procedure for identifying the ethno-pedagogical issues most basic to the problems of designing for effective learning.

Designing effective nonformal education involves consideration of motivations, expectations, and abilities of learners and the rewards and reward systems in which the learners and the learning experiences operate. What brings a person to the learning experience? *Sociological Motivations*: conformity, societal norms, enforcement, requirement. *Psychological Motivations*: curiosity, anxiety, ambition, anticipation of rewards. What will he or she get from the experience? *Sociological*: rewards, status, prestige, recognition income *Psychological*: fulfillment, gratification. What does he or she hope or

believe the experience will be? What is he or she able to do and what is he capable of learning to do? What constraints are there on learning?

The first set of questions below concern *motivations* of learners.

- What motivations will exist?
- Which of the extant *motivations* are appropriate to (consistent, in harmony with) the educational goals?
- How can these be enhanced, emphasized, dramatized?
- What are other motivations that would be consistent with the educational goals?
- Which of these are worth inducing (creating, establishing)?
- How can they be induced?
- Which of the extant motivations are inconsistent with the educational goals?
- Which of these would it be worthwhile to suppress or eliminate?
- How can they be eliminated?

The second series of questions concerns *rewards*.

- What *rewards* (reward systems) exist in the personal-social-occupational environment of the learners?
- Which of the extant rewards are appropriate to (consistent, in harmony with) the educational goals?
- How can these be enhanced (emphasized, dramatized)?
- What are other rewards that would be consistent with the educational goals?
- Which of these are worth inducing (creating, establishing)?
- How can they be induced?
- Which of the extant rewards are inconsistent with the educational goals?
- Which of these would it be worthwhile to suppress or eliminate?
- How can these be eliminated?

The third series of questions is parallel, but concerns *expectations*.

- What expectations about the learning will exist?
- Which of the extant expectations are appropriate to (consistent, in harmony with) the educational goals?
- How can these be enhanced (emphasized, dramatized)?
- What are other expectations *that* would be consistent with the educational goals?
- Which of these are worth including (creating, establishing)?
- How can they be induced?
- Which of the extant expectations are inconsistent with the educational goals?
- Which of these would it be worthwhile to suppress or eliminate?
- How can these be eliminated?

With reference to the matter of cognitive styles, mental and physical *abilities* of the target population, the following questions should be investigated.

- What is the level of ability to comprehend abstractions (of both the verbal and symbolic sort)?
- What is the reading skill (comprehension)?

- What are the mechanical and manipulative skills previously developed in the learners?
- What are the factors of health, attention span, alertness, concentration and application of effort that will affect the learners?
- What are the learning styles (in terms of cognitive styles and habits of response to pedagogy) that must be accommodated by the instructional design?

Summary

The questions specified above are primarily concerned with understanding and describing the target population. Appropriate accommodation of these factors can result in significant increases of learning effectiveness in nonformal modes of education. The next section of the paper draws from research in several behavioral science traditions. The examples cited are but a few of the many pieces of empirical findings that have meaning for the planning of effective learning in nonformal modes.

Research in the Psychological Traditions, Rates and Patterns of Physiological Development.

Formal education, with its customary emphasis on the transmission of knowledge, has sometimes stressed the intellectual growth of human beings at the expense of physical and affective development. The concerns of nonformal education allow no such dichotomy. The physiological development of learners is important in the goals of nonformal education, such as the teaching of skills and disseminating of health information. Research on early physiological development suggests that differences in early child-rearing practices may contribute to differences in physical stature, motor dexterity, and general health and well-being. Hopi, Navaho, and Rio Grande Indian children learn to walk more slowly than Anglos (Dennis, 1940). Negro infants raised in permissive, accepting environments show greater gross motor acceleration than those in rigid, rejecting environments (Williams and Scott, 1953). The motor development of Gandan infants, who are quite precocious at birth, slows down abruptly when they are weaned and sent away to a grandmother (Geber, 1958). Even though data such as the above are scanty and based largely upon the earliest developmental stages, they suggest *that* nonformal educators access the extant motor skills of the target populations for clues as to how readily certain tasks may be learned. They also suggest *that* some factors which contribute to adult health and motor dexterity may be altered through change of child-rearing practices. The above implies emphases on health education (especially for expectant mothers and mothers of young children) as well as family planning, and education in nutrition.

Emergency Reactions. Closely related to research on physiological development are studies of emergency reactions, such as aggression. Early anthropologists have provided some interesting examples of cultural patterning of emotional behavior. For example, when Santa Mata (Colombian) Indians have a severe grievance, they strike a tree or rock with a stick, using insulting language, until the stick is broken. The person who breaks the stick is considered the victor (Sumner, Keller, and Davie, 1927). Similarly, Kwakiutl Indians have institutionalized a potlatch ceremony. A person destroys his own property to gain an advantage over another (Boas, 1925). These rather extreme examples from primitive societies suggest a generalizable principle for nonformal educators, analyzing skills to be taught and the abilities of the learners is not enough; institutionalized rules governing emotional expression within a culture must also be understood and respected if teaching is to succeed. An agricultural education program could fail because the teacher lost his temper in a society where this behavior is not tolerated, or, conceivably, because he created suspicion by “playing it cool” in a

society where aggression is freely expressed. Accommodation of teaching methods and materials must include an attunement of the teaching style to the demands and norms of the society. If the feeling tone or modes of expression are foreign, the teaching may be rejected or misunderstood. This very likely would inhibit the effectiveness of education through television as much as direct personal teaching.

Primary Perception. While physiological and emotional development cannot be ignored in nonformal education, perceptual factors in learning effectiveness loom even larger in their importance. Systematic differences in responses to sensory stimuli have been observed across cultures. In one study (Allport and Pettigrew, 1957) a trapezoidal window illusion was used with Zulu subjects. In this illusion the window wavers backward and forward. Zulus, who were not familiar with Western windows, did not see the illusion. Studies such as this one suggest *that* great care needs to be exercised in the use of visual and symbolic materials in cross-cultural teaching. Representing three-dimensional objects on two-dimensional surfaces requires students to use perceptual skills which are related to reading ability. Three dimensional models of actual objects will probably be the preferred media with illiterate students. Thus the mechanical operation of a tractor will probably be more readily taught through using the machinery itself than through the use of charts and diagrams. When direct experiences are not possible, pre-requisite perceptual skills will probably need to be taught before two-dimensional representations can be interpreted. Specifying crucial pre-requisite perceptual skills is an important step toward learning effectiveness in nonformal education.

Piagetian Studies: Conservation. Studies based on Piaget's developmental theory are highly suggestive for nonformal educators interested in learning effectiveness. Two distinct clusters of cross-cultural studies have evolved: one around his theory on conservation, and another around animism and related tendencies. Piaget postulated progression in the achievement of conservation when one attribute, such as volume or number, is held constant while other attributes, such as shape or space, are changed. Studies have substantiated Piaget's findings in quite diverse cultures. They have also revealed some interesting cross-cultural differences. Tiv children (Price-Williams, 1961) achieved conservation earlier than Wolof children (Greenfield, 1966). Greenfield (1966) attributed this difference to a more manipulative approach to the environment on the part of the Tiv. Another finding, crucially important to those involved in adult basic education across cultures, is *that* without schooling qualitative change in the concepts of conservation appears to cease shortly after the age of nine. Thus unschooled adults in both Hong Kong and Senegal (Goodnow, 1962; Greenfield, 1966) failed to perform better than nine-year-olds on certain tasks. Both Goodnow (1966) and Greenfield (1966) believe that the difference in schooling rather than lower "intelligence" explains the low achievement of these adults. Without school, they have had little experience in abstract thinking or working "in the head". The above findings strongly suggest that the nonformal educator provide unschooled or semi-schooled students with immediate, concrete, perceptual cues and ample opportunities for "do-it-yourself" activities.

Piagetian Studies: Animism. Although cross-cultural studies of childhood animism and related phenomena have failed to produce integrated findings, the scattered bits of information they have provided are highly provocative. Indian children revealed considerably more tendency than white children to assign life to "dead" objects (Dennis and Russel, 1940; Dennis, 1943). Indian children showed less artificialism (tendency to label objects man-made) than white children (Dennis and Russel, 1940). Indian children established a dichotomy between rules for American games, which could be changed, and rules for their own games which they perceived as immutable (Havighurst and Neugarten, 1955). These findings point to a tendency to cling to traditional values when conflicting

systems exist side by side. Thus leaders involved in nonformal education may find that even while they are granted special roles as authority figures, the system they introduce may be quite peripheral in the indigenous society. Part of the educator's task will be to facilitate the integration of novel elements into the mainstream of the receiving culture.

Intelligence. For several decades there has been interest in developing "culture free" intelligence tests so that whatever these tests measure can be measured cross-culturally. Studies based on such diverse population as Fox Indians (Carney and Trowbridge, 1962), illiterate Syrian Bedouins (Dennis, 1960), Mexican-Americans (Carlson and Henderson, 1950), and American Negroes (Shuey, 1958) have suggested that "culture" is extremely important in intelligence testing and that to date cultural factors have not been adequately accounted for in such testing. True cross-cultural comparisons of intelligence are not possible at the present time. This does not preclude the use of tests standardized *within* cultures as predictors of school success or of success in certain occupations. They may also provide useful ability groupings for teaching and experimental purposes. They might prove to be measures of the "modernization" of a population, or predictors of the acceptance which certain educational innovations could expect. Comparative item analyses of easy and difficult test items within cultures would be revealing. However, it should be remembered that whatever intelligence tests measure is closely related to school success. Their ability to predict the success of non-schooled persons in semi-skilled or skilled occupations is probably limited. Many of the learners participating in "nonformal education" would fall into this category.

Sociological and Communication Research Traditions

Motivation for Learning. Relating to motivations for education is Brembeck's (1965) survey interview of 125 "parents, teachers, headmasters, school" inspectors and other middle level administrative personnel, high level education personnel and Americans assigned to overseas education missions of various types in India, Pakistan, and the Philippines. He found that there were four sources for educational aspirations: 1) a dominant parent or another person of his kin group who often was illiterate or had little schooling, 2) a person who serves as an "educated model" for either the dominant adult and/or the child, 3) a drive for economic betterment, 4) and anticipation of respect, acceptance and influence from his kin group. These findings suggest that there are numerous social, economic and psychological forces which are pressing the uneducated masses to achieve an education. Within the minds of these people education has great economic and social "payoff". They will better themselves financially and socially. It becomes imperative then that education seek to focus on the fulfillment of these aspiration-needs to the degree it is capable. Certainly no education can guarantee greater social acceptance. Education can, however, provide the technical and cognitive skills, to enable a person to achieve a socially acceptable job which will enable him or her to rise above economic peasantry.

Instructional Media. Regarding the question of instructional materials and especially instructional media, there are numerous findings which are germane. Schramm (1962) compiled the results of 393 experimental comparisons of television and classroom methods in schools and colleges in mathematics, science, social studies, humanities, history, literature, arts, language skills, health and safety. His summary shows that 83 experiments gave significant results for television teaching, 255 showed no significant differences between television teaching and regular classroom teaching, and 55 showed a significant result in favor of regular classroom teaching. He states that "it is apparent that television has been used for instruction with about as much success, over-all, as ordinary classroom

methods. Schramm's data suggests that success of television, however, is more likely for younger children, third through sixth grades, and in math, science and language skills. Television is as effective as a teacher and sometimes more effective under certain circumstances. This would be especially the case in those nations where national television already exists and with the continued increase of available television sets to more people. That rather technical subjects, such as math and science, could be effectively taught by television, gives some indication of the wide breadth of subjects available to televised education.

Related to the above is the fact that television has been found to have the highest credibility for news (see Weiss for list of eight studies). This also is a general pattern across cultures (Blumer, 1969 and Starck, 1969) independent of the use of other media. Television is also chosen by the general public as the primary source of general information (Roper, 1969). These findings along with Schramm's observations on television teaching suggest that this medium is a highly potent force for nonformal education. Ethiopia is an example of television usage for educational purposes. By 1966 thirty-seven educational programs were broadcast weekly and within just two years television set ownership increased by tenfold (Patterson, 1966). No other medium can boast of such rapid reception and such a highly credible acceptance. Henry Cassirer (1962) points out an alternative possibility for the use of television in education. He notes that it might be prohibitive to seek to install a television set in each primary classroom in each developing country. However, television, with all its attendant positive attributes as a powerful communication medium, could be used to train teachers. The result would be a multiplication of better trained teachers and a reduction of the handicap of the impersonalness of the television medium. He suggests *that* television be used not solely for pre-service teacher training, but also and especially for in-service training. The implications for nonformal education are fairly obvious: train teachers through the television medium by both precept and example and then turn them loose in their own local area to multiply themselves.

Media Forums. Regarding instructional media and delivery system, the findings in several countries on radio and television media forums have high significance. The studies in Canada (Nicol, et.al., 1954), France (Schramm, 1964), Japan (*Rural Television in Japan*, 1960), India (Mathur and Neurath, 1959), and Italy (Tarroni, 1962 and Puglisi, 1962) all confirm the exceptional effectiveness of combining a media presentation with local, small group discussion immediately following. This method seems to take the best from several worlds: the expertise of a knowledgeable person presented on the mass medium, the high credibility of especially television, the informal interaction of face-to-face group processes and the reinforcement received from group decisions to act. Rogers and Svenning (1969) give several pages to a thorough discussion of various types of media forum, their advantages, effects, rationale, and their relation to interpersonal communication. Thus for over a decade various countries have been using media forums for teaching a wide variety of subjects with high success.

Diffusion of Innovation. Relating to the issue of specifying learning tasks, the findings of Rogers (1962) and Rogers and Svenning (1969) are significant. Rogers and his numerous associates have sought to identify those people who most likely will adopt a new idea or innovation through contact with various change agents (for example, teachers, extension agents). Rogers' conclusions are based on various research surveys in Columbia (Rogers and Svenning, 1969) and in Thailand (Rogers, et.al., 1969). Adopters are classified according to the time of their adoption of the innovation. Adopter categories are quite similar across cultures (Rogers and Svenning, 1969). Innovators and early adopters score highly on modernization variables of literacy, aspirations, cosmopolitanness, mass media exposure, social participation, change agent contact, and higher education attainment. In order for nonformal education to be successful, there must be the adoption into overt behavior of the learning

tasks. The adopter categories provide an easy check-list of those within a given social system (target population) who will most likely adopt earlier than others. Thus the educator can focus his attention on the right groups of people. Also, Rogers' studies provide additional guidelines for change agents. That his studies have been in dissimilar cultures and countries, suggests the essential transcultural nature of the mechanism of change. The nonformal educator would be wise to review in greater detail these findings and seek to apply them to his own particular country and target population.

Social Sex Poles. In relation to the target population, it would be wise to keep in mind that the two sexes do utilize different skills and abilities of learning, even when the learning tasks are similar. Conditions under which males perform optimally are not the same as those for females (Garsi and Scheinfeld, 1968, summarize 474 references to sex differences in learning). The communicator in nonformal education must seek to know how learning differs between the sexes. He must also seek to tailor-make his teaching-learning experiences according to these differences. This is complicated when both sexes cannot be segregated or when the subject matter, e.g., literacy, appeals to both sexes. In these situations, the teacher must be able to provide experiences that will maximize the learning conditions for both sexes. It may be extremely difficult for some men to teach women and vice versa.

Classroom Structure. Avila, et al. (1968) reports that culturally and economically disadvantaged school children benefited from more structured classroom settings than advantaged children. They explained these results on the basis that disadvantaged children had more freedom outside of school than they could successfully cope with while, by way of contrast, advantaged children lived within a more structured environment. The significance here is that sufficient structure is needed in a learning experience to provide guidance, but that the need for more or less structure is related to socio-economic factors and to learning styles. The educator must therefore be well aware of his target audience's characteristics as he plans the learning environment and pedagogical styles and media.

Elaborated and Restricted Codes. Bernstein (1969) adds another aspect to our understanding of the target population through his study in England of elaborated and restrictive codes and their relation to social origins. His socio-linguistic approach seeks to provide some help in understanding how one's social setting pre-determines the way in which one decodes and encodes messages. It is his conclusion that the lower or poorer class uses a restricted code in which syntax and vocabulary are greatly limited thus allowing for a certain degree of predictability. In the upper classes, there is an elaborate code in which syntax and vocabulary are chosen from a broad range of possibilities and which therefore make for lack of predictability in communication. Schatzman and Strauss (1966) report basically the same findings in their comparison of lower and middle class encoding of a natural disaster in the State of Arkansas in the U.S.A. It appears when that the cultural-economic status of the person involved in a learning situation will greatly affect his ability to comprehend communication aimed at him and his ability to communicate to others. Also, Schatzman and Strauss suggest that the individual displays his modes of thought through his communication behavior. It is, therefore, necessary for the teacher to "get inside of" and empathize with the learner in order to understand how the various messages to and from teacher and to and from pupils are received. The teacher from another culture surely has this problem, but the teacher from another social level from within that same culture also has that same difficulty.

Guidelines for Effective Learning

The paper has demonstrated the complexity of the problem of planning for effective learning. There is no way to simplify the tasks; it is only possible to make them more clearly defined and to arrange them in convenient and scientific sequences. Basic to these sequences and to the designs which they

will enable are several understandings. Designing effective learning in nonformal modes depends on these understandings.

Understanding the Historical and Cultural Sources. Within every society there are sources in the traditions and the value systems that have given rise to what education has become. That which a culture has produced cannot be overlooked in the planning of something new. Whether education is a matter of elaborate institutionalized efforts or merely the simplicity of familial and tribal influences, rituals and indoctrinations, the sources are in the history and in the cultural milieu of the society. Before attempting to augment or significantly alter the educational resources of a community, region or nation, these sources must be examined and, to the extent possible, understood. Such understanding is necessary if new nonformal resources are to be designed in such a way as to have an ultimate accommodation (interlock) with the existing formal and informal systems of teaching and learning. With reference to these factors these guidelines are offered:

I. For Effective Learning, Nonformal Education Should Be Designed to Interlock into the Cultural and Historical Traditions of a Society.

Of the many variables in an instructional system, the target population is likely to be the most complex. The three sets of factors that must be understood are 1) the motivations that drive the learners and the sorts of psycho-socio-economic rewards that will sustain them as learners; 2) the habits and expectations that their previous learning experiences have induced; and 3) the styles of mental processes and learning characteristics that have been induced by previous formal and informal learning experiences. With reference to the first set of factors a guideline is offered:

II. For Effective Learning, Nonformal Education Should Provide Experiences for Which There is a Practical Use.

Education without an outlet for the learning is useless. Incentives for learning should be perceptible to the learners and should be specifically rewarded within a relatively short period of time. The second set of factors also suggests a guideline:

III. For Effective Learning, Nonformal Education Should Utilize Instructional Procedures That are Recognizable to the Learners as Being Learning Experiences.

This guideline can be interpreted as suggesting that only “old” methods should be used; however, there are many occasions wherein learners can be carefully and gently re-educated to recognize the learning potentialities in new procedures and forms. Thus it is possible to introduce new media and methodologies if the design provides for the necessary re-education needed to accept the new procedures. The third set of factors suggests another guideline:

IV. For Effective Learning, Nonformal Education Should Employ Instructional Materials Designed Specifically for the Dominant Characteristics of the Learning Styles and Mental Processes of the Learners.

Since the dominant characteristics of learners’ styles are largely in common within a society this is a realistic guideline. Not enough is known about cultural guidelines. Not enough is known about cultural factors that affect learning style; thus we cannot be sure that we are taking everything important into account, but there are a few highly significant continua or axes, such as the distinction between global and articulated cognitive styles, that do have high relevancy for the design of instructional materials (Hovey, 1971). The instructional system consists of far more than a plan for the delivery of educational resources. Perhaps even more important than the delivery system itself is the management and evaluation of the system, With reference to this matter two guidelines are offered:

V. For Effective Learning, Nonformal Education Should Be Designed to Operate Within A Management System Capable of Correlating Human and Physical Resources as Well as Articulating all Potentially Contributory Agencies

VI. For Effective Learning, Nonformal Education Should Operate Within an Evaluative Structure That Provides Data for Continuous Improvement of the Instructional Procedures.

An instructional systems approach to nonformal education accepts the view that objectives are as important as procedures. Many formal education programs are a result of valuing the perpetuation of procedures more than the achievement of goals. It is recommended that nonformal education be planned so as to respect the relationship of objectives and procedures indicated following:

1. Make a general statement of the problems and/or needs to which the nonformal education is to relate.
2. Make a statement of goals and objectives for meeting the needs.
3. Determine and operate a set of procedures that will likely achieve the goals.
4. Carry on a continuous evaluation and modification of procedures to assure *that* they achieve the goals.
5. Periodically assess the problems and needs in order to modify the goals and objectives of the system.

In such a relationship, the procedures of the system are less important than the goals; and the value of the goals is dependent on their relationship to the reduction of problems and the meeting of needs. As needs and problems change, the goals and objectives must change. As evidence indicates that goals could be better met, the procedures are changed.

Summary

Designing nonformal education that will lead to effective learning is a complex task. The relationship of the learning experiences to the learners' characteristics and life experiences constitutes the most demanding problem. Almost as complex is the problem of developing an administrative and evaluative framework adequately assuring the continuous refinement of the system. No simple response to an educational need, whether formal or nonformal, is apt to be adequate.

References

- Allport, G.W., and P.F. Pettigrew. Cultural Influences on the Perception of Movement: the Trapezoidal Illusion among Zulus. *Journal of Abnormal and Social Psychology*. Vol. 55, 1957, pp. 105-111.
- Acila, D., Gordon, I.J., And Curran, R. Behavioral Change in Culturally Disadvantaged Children as the Result of Tutoring. *Psychological Report*. 1968, pp. 389-390.
- Banghart, Frank. *Educational Systems Analysis*. New York: The Macmillan Company, 1969
- Bernstein, Basil. Elaborated and Restrictive Codes: Their Social Origin and Some Consequences, in Alfred G. Smith. *Communication and Culture*. N.Y.: Holt, Rinehart and Winston, 1966, pp. 427-441.
- Blumer, J.G. and McQuail, D. *Television in Politics*. Chicago: University of Chicago Press, 1969
- Boas, F. *Contributions to the Ethnology of the Kwakiut*. New York: Columbia University Press, 1925

- Brombeck, Cole S. Rising Educational Aspirations and School Learning, paper prepared for the Joint Seminar in Cultural Factors in Educational Change, Honolulu: University of Hawaii, Mimeograph, 1965
- Bruner, Jerome S. *Toward a Theory of Instruction*. Cambridge, Massachusetts: Harvard University Press, 1967
- Carlson, H.B., and N. Henderson. The Intelligence of American Children of Mexican Parentage. *Journal of Abnormal and Social Psychology*. Vol. 45, 1950, pp. 544-551.
- Carney, R.E. and Norma Trowbridge. Intelligence Test Performance of Indian Children as a Function of Type of Test and Age. *Conceptual and Motor Skills*. Vol. 4, 1962, pp. 511-514.
- Cassirer, Henry. Lecture to Purdue Seminar, in Report of International Seminar on Institutional Television, West Lafayette, Indiana: Purdue University, 1961
- Dennis, Wo. Animism and Related Tendencies in Hopi Children. *Journal of Abnormal and Social Psychology*. Vol. 38, 1943, pp. 21-36.
- Dennis, W. The Human Figure Drawing of Bedouins. *Journal of Social Psychology*. Vol. 52, 1960, pp. 209-219.
- Dennis, Wayne, and R. W. Russel. Piaget's Questions Applied to Zuni Children, *Child Development*. Vol. 11, No. 3, 1940, pp. 181-187.
- DeVos, George, A., and Arthur A. Hippler. Cultural Psychology: Comparative Studies of Human Behavior. In Lindzey and Aronson (eds). *The Handbook of Social Psychology*. Second Edition. Reading, Massachusetts: Addison-Wesley Publishing Company. Vol. IV: 1969, pp. 323-417.
- Elkind, David and Smmeroff, Arnold. Developmental Psychology. In Mussen, Paul H. and Rosenzweiz, Mark R, (eds.). *Annual Review of Psychology*. Vol. 20, 1970, pp. 191-238.
- Elvin, H.L. *Education and Contemporary Society*. London: C.A. Watts & Co., Ltd., 1965
- Fischer, Heinz-Dietrich, & Merrill, John C. (eds). *International Communication: Media, Channels, Functions*. N.Y.: Hasting House, Publication, Inc., 1970
- Garai, J.E. & Scheinfeld, A. Sex Differences in Mental & Behavioral Traits. *Genet. Psycho. Monosr.* Vol. 77, 1968, pp. 169-299
- Gerber, Marcelle. Psychomotor Development in African Children in the First Year and the Influence of Maternal Behavior, *Journal of Social Psychology*, Vol. 47, 1958, pp. 185-195.
- Goodnow, J.J. A Test of Milieu Effects with Some of Piaget's Tasks. *Psychological Monographs*. No. 555, 1966
- Goodnow, J.J., and Bethon, G. Piaget's Tasks: the Effects of Schooling and Intelligence, *Child Development*. Vol. 37, No. 3, 1966, pp. 574-582.
- Greenfield, P.M., and Brunet, J.S. Culture and Cognitive Growth. *International Journal of Psychology*. Vol. 1, 1966, pp. 89-107.
- Hartup, Willard W. & Yonas, Albert, Developmental Psychology. In Mussen, Paul H. Rosenzweiz, Mark R. (eds). *Annual Review of Psychology*. Palo Alto, Calif.: Annual Review Inc., Vol. 22, 1971, pp. 337-392.
- Havighurst, R.J., and Neugarten, B.L., *American Indians and White Children*. Chicago: University of Chicago Press, 1955. Chapters 5 and 6.
- Hovey, Richard L. Cognitive Styles in African Cultures: The Global-Articulated Dimension, Unpublished Doctor's dissertation, Michigan State University, 1971
- Hovland, Carl I., Janis, Irving L. and Killey, Harold H. *Communication and Persuasion*. New Haven: Yale University Press, 1953
- Howieson, Patricia, Elaine Haglund, and Ted Ward. Cross-Cultural Adaptation of Programmed Instruction. East Lansing, Michigan: Human Learning Research Institute, Michigan State University. (Mimeographed.), 1970

- Jahoda, Gustav. Child Animism II: A Study in West Africa. *Journal of Social Psychology*. Vol. 47, 1958, pp. 213-222.
- Levine, Robert A. Cross-Cultural Study in Child Psychology, in *Carmichael's Manual of Child Psychology*, Vol. 2, pp. 559-612. New York: Wiley, 1970
- Mathur, J.C. & Neurath, Paul. *An Indian Experiment in Farm Radio Forum*. Paris: UNESCO, 1959
- Nicol, J., Shea, A.A., Simmins, G.J.P, and Sim, R.A. *Canada's Farm Radio Forum*. Paris: UNESCO, 1954
- Pattern of Progress: Mass Communications in Ethiopia, Addis Ababa, Ethiopia: Ministry of Information, 1966.
- Powell, Leonard S. *Communication and Psychology*. N.Y: American Elsevier Publ. Co., 1969
- Price-Williams, D.R. A Study concerning Concepts of Conservation of Quantity among Primitive Children. *Acta Psychologica*. Vol. 18, 1961, pp. 297-305.
- Priglesi, Maria G. The Contribution of Italian Television to the Campaign to Eradicate Illiteracy through TV Broadcasts: It's Never too Late, Paper presented to the UNESCO meeting of Experts on New Methods and Techniques in Educating, March 12-20, 1962
- Rogers, Everett M. *Diffusion of Innovation*. N.Y.: The Free Press, 1962
- Rogers, Everett M. and Shoemaker, F. Floyd. *Diffusion of Innovation: A Cross-Cultural Approach*. N.Y.: Free Press, 1968
- Rogers, Everett M. et al. *Diffusion of Innovation: Educational Change in Thai Government Secondary Schools*. East Lansing, Mich: Inst. for International Studies of Education and Department of Communication. MSU, 1969
- Rogers, Everett M. & Svenning, Lynne. *Modernization Among Peasants: The Impact of Communication*. N.Y.: Holt, Rinehart & Winston, Inc., 1969
- Roper, B.W. *A Ten Year View of Public Attitude Toward Television & Other Mass Media 1959-1968*. N.Y.: Television Information Office, 1969
- Schatzman, Leonard & Strauss. Ansilm, Social Class & Modes of Communication. In Smith, Alfred G. *Communication and Culture*. N.Y.: Holt, Rinehart & Winston. 1966, pp. 442-455.
- Schramm, Wilbur. Mass Communication. *Annual Review of Psychology*. Vol. 13, 1962, pp. 251-284.
- Schramm, Wilbur. *Mass Media and National Development*. Stanford, Calif.: Stanford Univ. Press, 1964
- Sears, David O. & Abeles, Ronald P. Attitude & Opinions. *Annual Review of Psychology*. Vol. 20, 1969, pp. 253-288.
- Shuey, A.M. The Testing of Negro Intelligence. Lynchberg, Va: Bell, 1958
- Starck, H.J. Media Credibility in Finland: A Cross-National Study. *Journalism Quarterly*. Vol. 46, 1969, pp. 790-795.
- Sumner, W.G., A.G. Keller, and M.R. Davie. The Science of Society. Vol. IV. Oxford: Oxford University Press, 1927
- Tannenbaum, Perez Ho and Greenberg, Bradley S. Mass Communication. *Annual Review of Psychology*, Vol. 22, 1971, pp. 351-386.
- Tarroni, Evelina. Programme in the Struggle Against Illiteracy, Television and Adult Education. Vol. 6, 1962, pp. 3-8.
- UNESCO. Rural Television in Japan. Paris, 1960
- Weiss, Walter. Mass Communication. *Annual Review of Psychology*, Vol. 22, 1971, pp. 309-336.
- Williams, Judith, and R.B. Scott. Growth and Development of Negro Infants: IV. Motor Development and Its Relationship to Child Rearing Practices in Two Groups of Negro Infants. *Child Development*. Vol. 24, 1953, pp. 103-121.
- Zinbardo, Philip and Ebbesen, Ebbe B. *Influencing Attitudes and Changing Behavior* Reading, Mass.: Addison-Wesley Publ. Co., 1969.