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Toward a Theory of Independent Learning and Teaching

MICHAEL GRAHAME MOORE

INTRODUCTION

That each scholar can and should pursue knowledge in his own idiosyncratic fashion is a fundamental assumption of the university and one of its most ancient traditions. That students should be permitted to study "extramurally," as they say in Europe, is another tradition, one which has contributed to the growth in America of "university extension." In the 1960s and 70s these two traditions have given rise to institutions devoted largely, or entirely, to serving the "independent learner." Known by such names as "open university" and "university without walls," these institutions have captured the popular imagination, and stimulated a wave of research and experiment in non-traditional methods of teaching. While such research is underway to discover more about independent learners, to develop curricula for external students, to test various methods and techniques of instruction, the time has now come when the success of such studies is endangered by the absence of research in what W. D. Halls, writing in another field, has called the "macro-factors."

As we continue on the one hand to develop various non-traditional methods for reaching the growing numbers of people who cannot, or

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will not, attend conventional institutions but who choose to learn apart from their teachers, we should divert some of our resources to the macro-factors, i.e., describing and defining the field, which we now call independent learning and teaching, discriminating between the various components of this field, identifying the critical elements of the various forms of learning and teaching, in short, building a theoretical framework which will embrace this whole area of education.

With this conviction, we have in the last two years collected more than two thousand items of literature pertaining to what we thought might be called independent learning and teaching. By examining this literature, classifying it, and organizing it, we have developed a series of definitions, a framework showing the relationship between the various concepts defined, and a hypothesis which is to be tested to ascertain the validity of the most important of those concepts.

In this paper we will describe some features of this theory of independent learning and teaching. We are interested in a particular kind of learning that requires a special, though common, kind of teaching. Webster defines "to learn" as: "to gain knowledge or understanding of, or skill in, by study, instruction or investigation." On the side of the learner, we believe learning to be a purposeful and deliberate activity; knowledge which is acquired by casual experiences, or unsought, random, incidental knowledge is not of interest to us here.

Teaching is also a purposeful and deliberate activity. Teaching consists of planned behaviors intended to induce learning. We are, therefore, interested in a broad group of learners, and of teaching methods in what may, in Wynne's terms, be called "non-school structures deliberately designed to foster learning."[1] Our focus is on all forms of deliberate, planned, structured learning—and teaching—that are carried on outside the school environment.

For us, "school environment" means the classroom, lecture or seminar —the setting in which the events of teaching are contemporaneous, and conterminous, with the events of learning; "outside the school environment," therefore, means all settings in which a person pursuing knowledge is physically separated from a teacher, and in which the teacher's assistance must be communicated by print or some other medium.

[1] Edward Wynne is associate professor of education at University of Illinois at Chicago Circle and was organizer of the symposium at the 1973 AERA meeting at which this paper was delivered.

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A DEFINITION OF INDEPENDENT LEARNING AND TEACHING

Independent Learning and Teaching is an educational system in which the learner is autonomous, and separated from his teacher by space and time, so that communication is by print, electronic, or other non-human medium.

Independent learning and teaching is a system consisting of three sub-systems: a learner, a teacher, and a method of communication. These subsystems have critical characteristics distinguishing them from learning, teaching and communication in other forms of education. To understand the learning system, we must develop the concept of the "autonomous learner." To understand the communications system we must consider "distance teaching," and to understand the teaching system we must modify traditional concepts of teaching according to both the restraints and opportunities that are consequences of distance and autonomy.

THE COMMUNICATIONS SYSTEM—"DISTANCE TEACHING"

At the outset of this project, we were as confused as everyone else seemed to be regarding the meaning of independent learning. For example, in our first explorations of the literature, among references to "independent study," (a title surely qualifying the items for inclusion in our collection of literature) we found the following: "Why SUNY students fail to complete Independent Study courses" (the term "Independent Study" here referring to correspondence courses); "a system of Instruments for the management of independent study" (here it meant individualized, programmed instruction in a school setting); "Independent Study in secondary schools" and "Final report on an Independent Study program for the academically able" (which described supervised reading programs in schools); and, "A rationale and a role for Independent Study" (which focuses on out-of-school, part-time degree programs for adults).

The most obvious characteristic common to programs such as the above is the separation of teachers at the time of teaching from learners at the time of learning. We started, therefore, at that time with the notion of separation and proceeded to distinguish between two major classes of learning environment, one of which we called "contiguous" situations, and the other "distant" situations. In the former, the teacher

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as he teaches is in immediate physical proximity with the learner as he learns. Communication in such situations is by the human voice, and there is immediate, spontaneous, often emotionally motivated interaction between the learner and the teacher, and, usually, between the learner and other learners. This is the traditional, classical, teaching-learning environment: the setting of the lecture, the class, the group discussion, and the seminar. The distinguishing element in teaching and learning in this environment is what is usually called "social interaction," a relationship which assumes no delay in communication, no distance of space or time, between teachers and learners engaged in the social business of education.

Since the introduction of compulsory education for children, it has become widely assumed that contiguous situations are essential for good learning and teaching, an assumption that now lies almost unchallenged in many educational theories. A fairly typical statement of this assumption, in a paper published by the American Association for Supervision and Curriculum, says, "In this document, the word instruction refers to the activity which takes place during school and within the classroom setting."[2]

Learning and instruction *do* take place in other situations. Millions of learners, particularly adults, do not learn in classrooms, never meet or speak directly to their teachers, and many learn from teachers with whom they have no personal acquaintance at all. As contrasted to "contiguous" teaching and learning, theirs is a "distant" learning and teaching situation. Distance teaching may be defined as the family of instructional methods in which the teaching behaviors are executed apart from the learning behaviors, including those that in a contiguous situation would be performed in the learner's presence, so that communication between the teacher and the learner must be facilitated by print, electronics, mechanical or other devices.

In a distant learning and teaching situation, the teacher performs the tasks of teaching in some ways similar to and in others different from teaching in a contiguous situation. Similarly, the learner performs the tasks of learning by a variety of techniques, the distance between the two is bridged, and the more effective the bridging, the less the distance. The techniques used to provide the communication between the subsystems of learner and teacher include books, correspondence

[2] "Criteria for Assessing the Formal Properties of Theories of Instruction," American Association for Supervision and Curriculum, ch. 14 in R. T. Hyman, (ed.) *Contemporary Thought on Teaching* (Prentice Hall, 1971).

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programs, television, radio, programmed texts and teaching machines, computers, telephones, dial access systems, and tape recordings. We decided that a learner's "distance" from his teacher is not measured in miles or minutes. It is defined as a function of individualization and dialogue. In some methods of distance teaching, the teacher is able to provide a program which is responsive to the speed with which the student can learn. Programmed texts and computer-assisted instruction are such methods. Other methods do not permit such flexibility, programs being prepared for distribution at a determined rate, in a determined sequence, and at determined times. Radio and television programs are of this nature. A program is said to be "individualized" to the extent to which a learner can control the pace at which he receives information and at which he must make his responses. "Dialogue" describes the extent to which a learner may communicate with his teacher. Thus, learners who receive instruction from a teacher by telephone are less distant than those in a correspondence program, and both are less distant than those who receive instruction from a radio teacher. As measured by dialogue and individualization, methods of distance teaching in general, and programs in particular, can be classified from "most distant" to "least distant." A classification of methods is shown in Figure 2.

It is obvious that a distance teaching system is more than a teaching system, since media skills must be employed. Even the person who tries to teach by writing a book—"behaviors intended to induce learning"—must be an accomplished writer as well as a teacher, and in correspondence, computer, radio, film, and television teaching, the media skills are diverse, and complex. Modern distance teaching may even employ more than one communications medium. Twenty years ago it was possible for a learner to obtain instruction through any one of a number of media, or to put together into a system of his own, a combination of media. Having established his problem for inquiry, he could consult a textbook, enroll with a correspondence teacher, look out for relevant radio programs, and so on. Only in recent years, though, have teachers and media specialists actually prepared instructional packages that are designed to employ a number of media in an integrated manner.

Because it is now known that there are specific teaching functions that each medium is best suited for, and because the skills for communicating in each medium are of increasing complexity, single teacher–single medium distance teaching programs are becoming replaced by programs prepared by teams of teacher and media specialists. One of

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the first experiments in constructing integrated multi-media distance teaching systems was at the University of Wisconsin,[3] and the largest and most successful development has been in Great Britain's Open University.

In a talk prepared in 1971 for the Madison, Wisconsin chapter of Phi Delta Kappa, Walter Perry, Vice Chancellor of the Open University, had this to say about media-teacher-teams:

> Let me turn to the methods by which we have tried in the new university to develop courses for offering to the students. The method centers on the creation of what we call course teams. A course team consists of the academic staff concerned with the subject matter of the course, of educational technologists concerned with the design of the course (such things as the specification of objectives, the structure of the learning materials, the creation of assessment tests), and also of the BBC staff, concerned with the production of the broadcast elements of the course. The course team is charged by the Senate with all responsibility for the course: it determines the overall syllabus, it determines the smallest details—who will present a particular television program, what is the best graphic to illustrate one point in a correspondent package. By this means we have to a very large extent avoided the sort of confrontation between creative artists that is common whenever multi-disciplinary or multi-media approaches are used in education.

THE LEARNING SYSTEM: "THE AUTONOMOUS LEARNER"

Could we define independent learning and teaching as learning at a distance from teaching? We believe not. To focus sole attention on the communications techniques used to bridge the gap between teaching and learning in a distant learning situation would be hardly less serious than to ignore the gap altogether. The existence of the gap means the behaviors of teachers, and of learners, will be influenced by it, and so a theory of independent learning-teaching must take account of that influence.

Because he is alone, perhaps in a non-individualized, and therefore self-pacing, program (perhaps without dialogue, because he may be very distant from his teacher), the learner is compelled to accept a comparatively high degree of responsibility for the conduct of his learning program.

Simply stated, we have decided that the influence of distance on

[3] Charles A. Wedemeyer and Robert E. Najem, *AIM: From Concept to Reality. The Articulated Instructional Media Program at Wisconsin* (Syracuse, N. Y.: Syracuse University Publications in Continuing Education, August 1969).

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learners and teachers can be stated in terms of increased learner responsibility, the characteristic of an autonomous learner.

The concept of the autonomous learner is only meaningful in the framework of one of the two great "world hypotheses" about the nature of man and reality. It is not necessary here to belabor the difference between the "mechanistic," or "reactive" viewpoint, and the "active" or "organismic." However, it must be recognized that we are proceeding within the framework of the "active" model. We postulate people who are the sources of their own behavior, the behavior of each organism being a function of its peculiar form, and its state of development, not, as in the reactive model, a function of stimuli applied to it. Ultimate responsibility, then, lies within the organism. With aging, the organism changes its form and structure, so that it is qualitatively different at one stage than at any other. The process of maturing is that of growing through the various stages. At some point in this process, the young person acquires "autonomy." In Erikson, the ego quality of autonomy emerges in infancy, though it would be consistent with his theory for a particular kind of autonomy, such as "autonomy in learning" to emerge at a developmental stage in which the primary ego crisis is no longer that of "autonomy versus shame and doubt." It may well be that, as learners, people are struggling in an "autonomy versus shame and doubt" crisis in grade school, high school, or university. Indeed, it is our observation that many people in adult education are engaged in such a crisis. For healthy people, sooner or later, the decision to be autonomous is taken, from which time each person is responsible for his own learning. Borrowing some wording from Murray's need system, we define learning autonomy as, "The will and ability to exercise powers of learning, to overcome obstacles for oneself, to try to do difficult learning tasks, and to resist coercion."

The "powers of learning" are manifested in three sets of events, which we will call establishment events, executive events, and evaluative events. Establishment events are those in which the learner decides the long-range goals of his learning. He identifies a need in the form of a problem to be solved, a skill to be acquired, or information to be obtained. He also establishes short-term objectives, and criteria by which to test their achievement and the achievement also of his general goals.

Executive events are those in which the learner gathers the information he desires, collects ideas, practices skills as he works to solve his problem and achieve his goals. These events include reading books, attending lectures, consulting specialists, and performing experiments.

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Evaluative events are those by which the learner judges the appropriateness of newly learned skills, the adequacy of his problem solutions, the quality of ideas and knowledge acquired in the executive stage. He reaches conclusions, accepting or rejecting the material and eventually deciding the goals have been achieved, or abandoning them.

In less general terms, some of the characteristics of the autonomous learner can be gathered from the following description by Wedemeyer. He says that some of the traits of autonomous learners are:[4]

1. They like to plan ahead—a day, a week, a month—and longer.
2. They usually stick to a plan, modifying it as they go along, but never abandoning a plan without improving it to serve their convenience and to help them "keep at it."
3. They organize their lives to make the best possible use of time, the most critical ingredient of successful independent study.
4. They realize they can't start a new activity (learning) without giving up something else that formerly took the time now set aside for study.
5. They enjoy reading, writing, listening, and discussing.
6. They have open minds to learning new things.
7. They enjoy questioning, testing, and analyzing.
8. They are not afraid of being different.
9. They like to form generalizations, look for principles, and find the basic structural ideas in any subject.
10. They have developed skills in note taking, remembering, and relating.
11. They work cooperatively with others, but enjoy being "on their own" in learning.

Most educational theories stipulate the desirability of learners acquiring skill in establishment, execution, and evaluation events, i.e., to conduct their own learning. Carl Rogers defines the "educated man" as "the man who has learned how to learn; the man who has learned how to adapt and change; the man who has realized that no knowledge is secure, that only the process of seeking knowledge gives a basis for security."[5] The role of instruction in preparing a learner of such autonomy is stated by Bruner: "Instruction is the provisional state that has as

[4] C. A. Wedemeyer, "How to Earn College Credit and a Degree," background paper for CEEB Handbook for Continuing Education in America (unpublished, Madison, 1969).

[5] Carl Rogers, *Freedom to Learn* (Columbus, Ohio: Charles E. Merrill, 1969), p. 104.

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its object to make the learner or problem solver self-sufficient."[6] The autonomous learner is one who knows how to proceed through each of the learning events. He has what Thelen calls "captaincy of self," so that in educational situations he is, "aware of the many choices among ways he might behave; he will make decisions among these ways; he will then act and see what happens; he will review the process and study it with the help of books and other people; he will speculate about it and draw tentative conclusions from it."[7] Thelen's reference to "books and other people" points out that the autonomous learner is not to be thought of as an intellectual Robinson Crusoe, castaway and shut-off in self-sufficiency. Autonomous learners have recourse to teachers in all kinds of media, particularly in books, but also in radio and television programs, correspondence courses, and even in contiguous teaching situations. The autonomous learner turns to teachers when he needs help in formulating his problems, gathering information, judging his progress, and so on, surrendering temporarily some of his learner autonomy as he says in effect "help me in my learning task." However, if he is a truly autonomous learner, he will not give up overall control of the learning processes. He therefore seeks a particular kind of teaching which is, in Maslow's words, "receptive rather than intrusive," doesn't "condition, reinforce, or boss," but which helps him discover his own problems, his own aptitudes, and his own answers.[8]

THE ROLE OF THE TEACHER IN THE INDEPENDENT LEARNING AND TEACHING SYSTEM

The relationship of an autonomous learner to a teacher, distant or not, is obviously different from that of non-autonomous learner to his teacher. For the non-autonomous learner we can speak of a teaching-learning relationship, where the teacher's role is that of a director of learning and the learner's is to respond to the teacher's directions. The teacher tells the learner what is to be learned, how it is to be learned and when it has been learned. The autonomous learner needs no such direction. To emphasize the different relationship, in contrast to teach-

[6] Jerome Bruner, *Toward a Theory of Instruction* (New York: W. W. Norton, 1966), p. 53.

[7] Herbert A. Thelen, *Education and the Human Quest* (Chicago: The University of Chicago Press, 1972 edition), pp. 89-90.

[8] Abraham Maslow, "Some Educational Implications of the Humanistic Psychologies," *Harvard Educational Review,* 38 (fall 1968).

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ing-learning, we will refer to learning and teaching, where the teacher's role is not that of director, but of resource. In learning and teaching situations it is the teacher who responds to the learner. Allen Tough writes of this kind of teaching as "helping" and of the teacher as a helper. The function of the teacher in this learning and teaching relationship is "providing information, advice (or suggestions and recommendations), and reasons that help the learner make the decision and understand the reasons for it. The helper provides detailed information about the various possibilities that are open, but lets the learner himself make the decisions. This is similar to the role of the consultant, who enables someone else to do something; the consultant does not himself make and implement decisions. The distinction between help and control is important, because it helps us realize that a learner can receive a great deal of help without giving up any of his control, or responsibility."[9]

Learner autonomy is heightened by distance. Indeed, the learner is compelled by distance to assume a degree of autonomy that he might find uncomfortable in other circumstances. Similarly the teacher in a distant situation is compelled to assume the ancillary, supporting, helper's role, to be used and drawn upon, by the learner, to the extent that the learner desires. When the teacher prepares instruction for a correspondence course, a radio broadcast, or a text, it is with the intention that his material will meet the goals established by learners, and will be used in their executive events. Whether the material is used remains outside the distant teacher's control; the decision depends almost entirely on the worth of the material in the program. Distant learners literally "turn on" to the executive material that meets their goals, and turn off that which does not. By comparison, in most contiguous situations, establishment events are entirely in the purview of the teacher, not the learner. The teacher also dominates the evalutive processes, invariably establishing the criteria of successful learning, and passing judgment on whether the criteria have been satisfied. When teacher's goals do not coincide with learner's, as is often the case, learners, through fear, apathy, courtesy, (or for a score of other non-learning motives), invariably adjust themselves to comply with the establishment behaviors of their teacher. "Democratic" and "progressive" instructors frequently encourage their learners to participate in establishment and

[9] Allen Tough, "The Adult's Learning Project" (Ontario Institute for Studies in Education, 1971), pp. 177-78.

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evaluative processes, but seldom do the results of such participation fail to conform with the teacher's own wishes and intentions. It is hardly surprising, less surprising perhaps than that such teachers should even attempt to be "democratic" in what is an intrinsically authoritarian social setting. However much "progessive" teachers may protest, in their classrooms they have not been able to disassociate themselves from the role of *in loco parentis*, nor to discourage learners from deferring to the authority that proceeds from that role.

We have shown that in independent learning and teaching, the learner is likely to be more autonomous, and teachers more auxiliary, than in contiguous teaching-learning. However, because of the distance, the events of teaching in independent learning and teaching situations must be especially carefully contrived. Since they are to be communicated by non-human devices, programs must be most carefully prepared, with the teacher's aims and intentions unambiguously stated, and the target population clearly defined, materials well-devised, well-illustrated, and appropriately paced. The contiguous teacher can hope to improvise alternatives if he senses that what he has tried to communicate has not been understood. The distant teacher cannot. If his media permit, he can arrange "feedback," but, generally, he tries to anticipate questions and problems, and prepare responses in advance of the questions. The principle is best seen in "branching" forms of programmed instruction, and also, in a grosser form, in the bibliographic sources provided at the end of textbook chapters, where the learner is directed to sources for answers to his anticipated questions. Thus, in independent learning and teaching, teaching is, perhaps paradoxically, both responsive and anticipatory. Consider the analogy with dining. A child sits expectantly at his mother's table, and consumes the meal she places before him. He may try to reject that which he finds unpalatable, or seek extra helpings of what he enjoys, but the nature of the meal is limited and is determined by his mother with little contribution from the child. By comparison, in a cafeteria, in anticipation of the patron's demands, a selection of dishes has been prepared and exposed to view. Those the diner likes he may select, those he dislikes he will certainly reject. His choice may be nutritionally sound, or foolish. He may come in search of a particular fare, which he may find, or, if unsuccessful, he may reject the whole offering, and take his appetite elsewhere. So with learning and teaching compared with teaching-learning; in the latter, the learner tastes only the intellectual foods prepared by his loving teacher, while in the former, his consumption is determined by his own

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appetite, and the production of teaching programs is in anticipation of his demands. In independent learning and teaching theory, therefore, teaching is thought of a "a system of behaviors intended to induce learning," but no inducement occurs until the learner himself has already started to behave in the way of a learner, by approaching the work of the teacher, already completed perhaps in anticipation of such an approach.

A HYPOTHETICAL FRAMEWORK AND PROPOSAL FOR TESTING IT

So far we have shown that in an independent learning and teaching system we have:

a. autonomous learners engaged in learning events
b. distant teachers preparing programs of instruction for transmission through communications media
c. communications media systems to bring teaching programs to learners in response to learners' demands.

In our efforts to identify relationships between these three subsystems, we tried to order a sample of distant teaching programs according to the kind and extent of autonomy the learner is expected—or permitted—to exercise. We placed programs in appropriate positions on a continuum, with those permitting the exercise of most autonomy at one extreme, and those with least at the other. For every program, we sought to identify the relationship between learners and teachers, and where control of each instructional process lay by asking:

Is learning self-initiated and self-motivated?

Who identifies goals and objectives, and selects problems for study?

Who determines the pace, the sequence and the methods of information gathering?

What provision is there for the development of learners' ideas and for creative solutions to problems?

Is emphasis on gathering information external to the learner?

How flexible is each instructional process to the requirements of the learner?

How is the usefulness and quality of learning judged?

By this subjective, inductive, method we put together a typology of programs, according to Figure 1.

In this typology, programs are placed in a hierarchy, ranging from:

1. those giving the learner complete autonomy;

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	Establishment	*Execution*	*Evaluation*
1.	A	A	A
2.	A	A	N
3.	A	N	A
4.	A	N	N
5.	N	A	A
6.	N	N	A
7.	N	A	N
8.	N	N	N

A = Autonomous
N = Non-Autonomous

FIG. 1. Distance Teaching Program Types Classified by the Dimension of Learner Autonomy.

2. those in which the learner's progress is judged by an external agent, either the teacher, his college, or an examining authority;
3. those in which the learner establishes his problems and goals and evaluates his progress, but in the course of information gathering he is controlled, (as is the case in programmed instruction);
4. the unusual program type which gives the learner no control of the executive and evaluative processes once he has defined his own problem and goals;
5. also uncommon, where execution and evaluation are learner controlled;
6. the most uncommon, where the student evaluates what he has had no control in preparing or executing;
7. by far the most common, where the student has some control on the executive process, but where the goals are prescribed by his teacher, and he is evaluated by an external agency. The majority of school-college independent study programs fall into this category;
8. finally like AAA, NNN cannot exist in reality, since no learner is either entirely free of others' influence, or entirely dependent on others. These are theoretical constructs which describe the bounds of reality.

We also (as previously noted) classified programs according to the "distance" between learners and teachers, and obtained the following hierarchy of independent learning and teaching methods:

When we compared the two classifications, we found that there is a relationship between the situation of programs in the distance hierarchy, and in the autonomy hierarchy. Programs that were placed for providing "more" autonomy in the learning events, were also placed "more"

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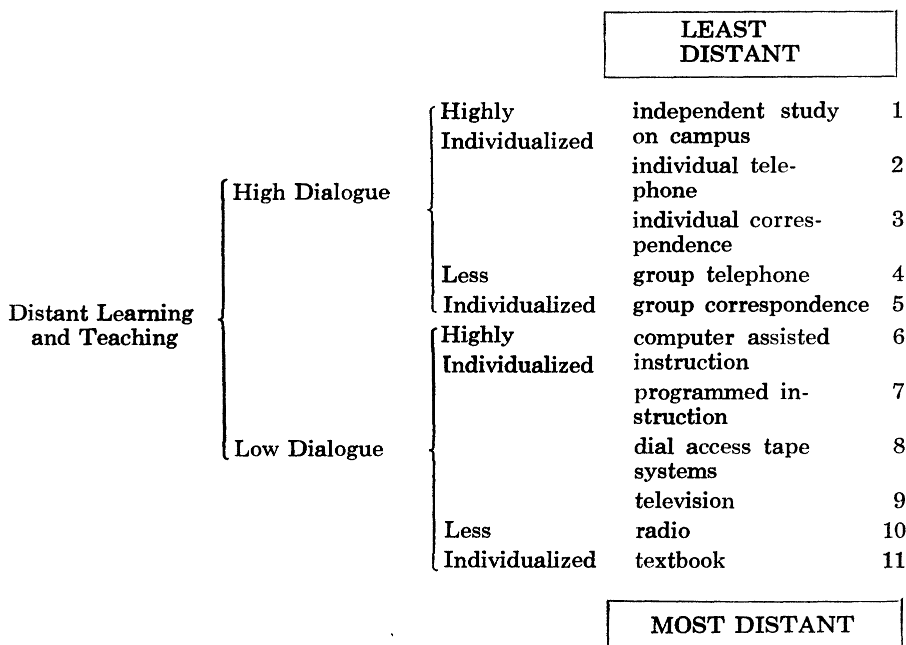

FIG. 2 Distant Learning and Teaching methods classified by the Dimension of Distance.

distant. Our definition of independent learning and teaching in terms of both distance and autonomy is based on this observation. There are degrees of "independent learning and teaching." The more distant, the more independent, but simultaneously, the more distant, the greater the learner autonomy. The concept of independence therefore must be two-dimensional.

The above observation has given us an hypothesis, which we are proposing to test, thereby seeking empirical support for our theory.

Our hypothesis is that more autonomous persons will be attracted to more distant methods of learning and teaching, and therefore, that measurable differences will be found in the "autonomy" of learners in programs varying in distance. It seems reasonable to suppose that if it is indeed true that more distant methods of learning and teaching require the exercise of greater learner autonomy, the kinds of people who participate successfully in such programs will be measurably more autonomous than learners in less distant programs. The measurement of "autonomy" may cause us difficulties; we plan to use selected items of one of the major non-projective tests of personality to get at this.

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We will obtain samples of learners in very "distant" situations—students engaged in personally-directed study in public libraries, and less distant students—some using an educational television program, others studying by correspondence, and some by the educational telephone network. The hypothesis under test will be that between these groups there are no differences in the distribution of autonomy scores. If no differences are found, i.e., if highly autonomous people are found to learn as happily in less distant methods as in more distant, and less autonomous people to learn in more distant methods as well as less distant, it would suggest that there is not the strong relationship between distance and autonomy that we believe we observed in our examination of program types, and the basis of our theory would be falsified.

This is the point at which our work has now arrived.

SYSTEMS OF INDEPENDENT LEARNING AND TEACHING

Our research has been limited to definition, description and explanation in the field of independent learning and teaching. However, in conclusion, it is appropriate that, as educators concerned with overcoming impediments to good learning, we use some of the notions described so far, to suggest why the expansion of systems of independent learning and teaching is desirable, and the form that such systems might take.

The educational argument for developing systems for independent learning and teaching has both psychological and economic-social aspects. Psychologically speaking, adulthood is a time of differentiation of interests, attitudes, skills, social roles, even intelligence. In other words, as one gets older, one becomes more peculiarly oneself, more unique, more unlike all others. While stages of growth are general, and problems of growth have generalizable, common characteristics, for each individual every problem is a function of his organism in transaction with his environment, and therefore in many respects entirely unlike the problems of others.

In economic-social terms, the 1970s are a time of ever increasing specialization of technology and of labor. The better an adult's formal education, the more advanced and specialized is his employment likely to be, and the more rapidly changing. The level of education of all adults is rising, the degree of specialization is increasing, the rate of change is accelerating. We are now generally aware that vocational redundancy occurs so frequently that for most workers frequent retrain-

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ing is necessary. At the level of university teaching, for example, every teacher is a continuing, independent learner. The educational needs of adults are derived from work problems, or problems arising in the course of personal growth. We have suggested that both kinds of problems are highly specialized. Therefore, while it may (or may not) be practical to bring children into contiguous learning situations for teaching-learning relevant to their supposedly common needs, it is entirely impractical to try to develop such situations as the normal environment for adult education. Except for the most gross, the most common needs (teaching of illiterates in urban centers for example) it is impossible to find, at the same place and at the same time, enough adults with common learning needs, and teachers qualified to help them. For the overwhelming majority of adult needs, "tailor-made" programs are necessary.

An independent learning-teaching system is a tailor-made program. It consists, as we have described, of a learner who has developed the will and the skill to be an autonomous learner, teachers who can anticipate learners' needs, and respond to them, with varying degrees of dialogue and individualization.

What strikes the concerned educator is the reluctance of formal educational institutions to encourage the development of independent learning and teaching systems. Although there have been signs of change in recent years, independent learning and teaching is still regarded by most institutions and educators, at best, as a minor appendage to "regular" schooling, autonomous learning is seldom positively encouraged, and learners who do succeed in constructing their own learning and teaching programs are discriminated against.

In view of this neglect, it is surprising—and perhaps a sign of the little influence that educators really have—that vast numbers of people do pursue independent teaching and learning programs. It usually surprises educators of children in schools to hear how large a proportion of the learning community is adult, and how many of those learners are seriously learning without the "benefit" of conventional teaching. Estimates of numbers vary, depending on differences in definitions. The authoritative Johnstone Study estimated that of 24 million adult learners in the USA, nearly 9 million were engaged in independent study.[10] That was a conservative estimate. At the other extreme, Allen Tough

[10] J. W. C. Johnstone and R. J. Rivera, *Volunteers for Learning: A Study of the Educational Pursuits of American Adults* (Chicago: Aldine Publishing Company, 1965).

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states that *all* adults are engaged in programs of independent learning, "almost everyone undertakes at least two major learning efforts a year, and some individuals undertake as many as 15 or 20."[11] It should be emphasized that Tough was not describing "incidental learning," but projects which were major, "highly deliberate" efforts to gain new knowledge, insight, or understanding. He writes, "It is common for a man or a woman to spend 700 hours a year at learning projects." Importantly, he notes, "About 70 percent of all learning projects are planned by the learner himself, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources."

From this perspective, it seems that the contemporary world of learning and teaching, like the iceberg, is not really as it appears. Above the surface, visible to all, floats the world of youth oriented, formal, school and college education, kindergarten to graduate school. Here teachers motivate, instruct, measure, and take roll call, while students respond, learn, and take examinations. And researchers research. However, below the surface of the public schools and universities, for every youth in the formal system there would seem to be several adults organizing their own learning programs, setting their own objectives, pursuing the relevant materials, evaluating their progress, and in all these events seeking out what help they need.

Concerned educators are faced with the practical problem of how to mobilize the resources of our traditional institutions, particularly those resources that are underused, or misused, and to apply these resources in a systematic way to meeting the needs of the large numbers of presently neglected learners.

In Wisconsin in 1970, a Governor's Commission on Education identified a potential population of over 800,000 independent learners (one third of the adult population), and proposed the establishment of a sytem to serve them. The proposed system was called the "open education system," and became generally known as "the open school."[12] The open school would be an integrated system of autonomous learners, distant teachers, and communications media. It would be governed by an open education board composed of members of the governing boards of each of the main existing educational institutions, and members representing private education, libraries, business and industry, commercial

[11] Allen Tough, *The Adults Learning Projects* (Toronto, Ontario Institute for Studies in Education, 1971), p. 1.

[12] Quotations are from, *The Open School,* Supplement to the Governor's Commission on Education, State Office, Madison, 1971.

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broadcasting, labor and students. The existing institutions were therefore offered the opportunity to work together in providing programs of instruction to independent learners. The system was intended "to supply opportunity to those whom the regular schools do not reach," but in doing so, "to complement, and not to rival, the needed educational programs and services already provided."

The system would be responsive to learners, trying to provide the learning programs that were needed, as the need was expressed by the clientele; "to provide all citizens of the state with a means of learning throughout their lives, as needs and circumstances require new learnings, at the conveniences of the learner citizens."

"The emphasis in the open school approach is on providing the services people need more than on providing what institutions may desire to offer."

The system would consist of:

a. A Learning Resources Center—the "teaching sub-system," with a small staff of teaching and learning specialists with access to every education institution in the state,
b. a Communications Resources Center—the "Communications subsystem," with access to the state's television, radio, ETN, film, library, computer, and other communications resources, and, of course,
c. the state's independent learners.

Over a period of years, by "borrowing" specialists from the learning and communication resources, the open school would develop a bank of educational programs covering an ever widening area of knowledge. These programs would consist of "a balanced offering of credit and non-credit programs, . . . a curriculum of learning as a lifelong experience . . . the programs . . . matched to peoples needs and abilities as they emerge, not solely to age or previous schooling."

Open school staff would include program teams, delivery systems and access systems to service distant learners and see that particular, individual needs were being met. Such services would range from the minimal assistance that a highly autonomous, non-credit seeking learner might have—in many ways similar to the service of a reference librarian —to full fledged counseling and instruction for less autonomous, but distant, credit seeking learners.

The open education system has not yet been established. It is our hope that it soon will be, and it is also our hope that by developing the theory of independent learning and teaching, we will contribute

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to its establishment. However, to enter into the open education system would require a major adjustment of philosophy by many long established institutions, and that of course takes time. Of a not dissimilar proposal, Jack Arbolino and John Valley wrote:[13]

> It should be remembered that we are reaching for no less than a major institutional reform that will enable us to provide humanistic and social incentive to match our technological advances. If we succeed we would open a new road to the development of individual potential and deliver at last the equality of opportunity we have always promised.
>
> [On the other hand] one may list the obstacles and cite the dangers [to institutional change]; . . . men will change their politics, their wives, and their morals, before they dare to change their institutions—or even try to start a new one.

[13] Jack Arbolino and John R. Valley, "Education: The Institution or the Individual?" *Continuing Education,* October 1970, pp. 6-7.

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