1976

Perspectives on individual instruction in extension education

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PERSPECTIVES ON INDIVIDUAL INSTRUCTION IN EXTENSION EDUCATION.
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Education, adult

Xerox University Microfilms, Ann Arbor, Michigan 48106
Perspectives on individual instruction in extension education

by

Lloyd William Wade

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Department: Professional Studies
Major: Education (Adult and Extension)

Approved:

Signature was redacted for privacy.

In Charge of Major Work
Signature was redacted for privacy.

For the Major Department
Signature was redacted for privacy.

For the Graduate College

Iowa State University
Ames, Iowa

1976
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INTRODUCTION

American education appears to be witnessing a heightened interest in the individual learner. The concepts of individual instruction or individualized instruction seem to be exerting considerable impact on education in the United States. Perhaps many observers would agree that the trend has reached the proportions of a movement. Opinions may differ as to the relevance or importance of the movement. Nevertheless, individualized teaching does seem to be firmly established as an instructional development (1).

Significance of the Study

The fact that every learner is unique seems sufficient justification for an interest in the topic of individual instruction. "Perhaps no tenet of education is more widely held or more frequently expressed than that education must be centered in the individual" (2, p. 13). Yet group instruction and mass education are social necessities. Consequently, numerous organized efforts have been made to "insure that the individual not be lost in the group."

Wedemeyer and Childs (2) suggest that:

A mere listing of some of the best known attempts at solution will indicate their number and variety. The list includes the Lancaster Plan, the Dalton Plan, two-track plans and three-track plans, semi-annual promotions, differentiated curricula, ungraded classes, homogeneous grouping, sub-grouping within classes, special classes and differentiated assignments (p. 13).

The principles of programmed instruction and mastery learning appear
to have provided the basis for much of the theory and research related to individualized learning.

Borg and Gall (3) report that several projects related to the development of the individualization of instruction in the school curriculum are in progress on a large scale, and that "Each of these projects has required millions of dollars and years of research effort" (p. 22). In their estimation, the most significant of these projects at this time is Individually Prescribed Instruction (IPI), but they do consider work on individualized instruction related to other projects as an important line of current research activity. They also note that "The theoretical rationale for IPI is the research findings and instructional theories that have resulted from work on programmed instruction" (p. 20).

Interest in the individualization of learning is not confined to primary and secondary education. Cross (4) speaks of a "new concern" for the individualization of instruction and indicates that "At the level of higher education, the concept of mastery learning has been incorporated into a more sophisticated learning model known as PSI (Personalized System of Instruction)..." which is a plan developed by F. S. Keller. Reportedly, "The Keller Plan has swept across the nation and across academic disciplines at a phenomenal rate" (4).

Such an interest in projects and plans of individual learning would suggest a concomitant growth of work on materials related to the movement. Gow and Yeager (5) feel that:
During the last ten years, increasing attention has been given to the development of individualized instructional materials at the primary, secondary, and postsecondary levels. This attention is manifest in the work of educational research centers, regional laboratories, and many special curriculum development projects sponsored by both public and private agencies.

If Weisgerber (6) is correct, a considerable number of learners are realizing the impact of the movement:

By any conservative estimate, the numbers of students involved in individualized educational programs today must number in the hundred of thousands. It is probably the single most exciting trend in American education today.

At this point it would seem that individualized instruction is an important form when considered from the standpoints of effort, expenditure, number of plans, materials production and number of learners.

The matter under investigation here is the relationship of individual instruction to extension education. It is a fundamental assumption of this study that extension is a noteworthy social invention and a vital type of education.

The need for this study is suggested by the fact that individual instruction appears to be an important method, and that extension education is a significant part of the total education enterprise.

Purpose of the Study

This research is concerned with an examination of the phenomenon of individual instruction with respect to extension education. The general purpose of the study is to increase understanding about individual instruction in extension. As an inquiry into the status of
individual instruction in extension, this is exploratory research. It will not attempt to investigate the efficacy of individual instruction under the varying conditions found in extension education.

The more specific purpose of the study is to probe the extent to which a relationship might exist between individual instruction and extension education, and examine the nature of this relationship in the light of selected perspectives.

The effort to develop perspectives and assess the status of individual instruction in extension education will proceed in a systematic fashion. The study will begin with a discussion of problems related to definitions. It will contain a literature review of previous research and commentary on individual instruction in relation to the broad field of adult and continuing education. It will seek to identify apparent historical highlights in extension, especially with regard to university extension in the United States.

A theoretical framework will be formulated to provide a rationale for the design of research on individual instruction. A method of research will be prepared from this theoretical perspective. The research problem will focus on selected elements of extension and analyze various levels of extension pertaining to these elements. Research perspectives will focus on selected dimensions of individual instruction at each level. Detailed objectives for all levels are specified in the Procedures section of the Method of Research chapter below.

Findings will be reported for each level of research, followed by a discussion and summarizing remarks.
First, a consideration of definitions is indicated.

Definitions

Individual instruction can be studied as a phenomenon in its own right, as a general class of events in education, but the problem of definition of terms should be noted.

Individual instruction can be approached from different standpoints -- method, plan, technique, etc. Regardless of the standpoint selected, the investigator will soon encounter the problem of definition centering on the question of what constitutes individual instruction.

**Individual instruction**

At the onset of an attempt to determine the nature of individual instruction, the lack of standard terminology becomes immediately apparent. This is particularly evident in attempting to resolve the distinction between *individual* instruction and *individualized* instruction.

Although there is a close (and sometimes inconsistent) relationship between individual and individualized instruction in the educational literature, the two terms are conceptually distinct. This research is concerned with individual forms of teaching and learning but will, of necessity, exhibit interest in some individualized aspects of instruction.

There is also a conceptual distinction between individual teaching and individual learning but the two might commonly be taken to be components of the same instructional process.
The question of how to classify approaches is not an easy one. Weisgerber (6) expresses the classification problem in this way:

> Individualized learning is known today by many labels — which are often as misleading as accurate. Among them are personalized instruction, diagnosis and prescription, independent study, and self-directed learning. Efforts to classify and delineate these various approaches have been attempted by a number of people. For the most part these have been largely semantic exercises, since most individualized learning programs do not fall neatly into one or another of the categories.

Gibbons refers to tutoring as the "original individual instruction" once reserved for the rich. He sees three general types of individualization in the instructional reference:

1. those programs in the school designated as individualized as a result of changing traditional systems.

2. those programs which have unmistakable characteristics of individualization but are not designated as such.

3. those "...programs not necessarily associated with the school but obviously individualized: tutorials, correspondence courses, and the informal programs of independent study any man embarks upon when he seriously asks a question and pursues the answer by going to observe, opening a book, or talking to one who may know" (7).

Ultimately it is always the individual who does the learning in an instructional situation. Due to the ambiguity of the term individualized instruction, however, Gibbons thinks that "A precise vocabulary is needed to establish accurate communication about instruction" (8, p. 55). In view of the "bewildering array of forms" the interest in
individualized instruction has taken, he has done a considerable amount of work in an attempt to unravel the semantic inconsistency in the definitional problem.

Gibbons (8) has prepared a chart illustrating his taxonomy wherein individualized instruction consists of two types: individual and class. He sees individual instruction as consisting of three forms: active, responsive and permissive. (See Figure 1, p. 22 in Gibbons.) He gives examples of both direct and indirect programs for each of the three forms.

According to Gibbons (8), examples of direct, active, individual instruction would include the tutorial, the private lesson and apprenticeship. Examples of indirect, active, individual instruction would include programmed learning, correspondence courses and independent study as part of a course.

This research is not concerned with classroom instruction, but the schema developed by Gibbons is useful in illustrating the difficulty in organizing the considerable activity related to individual instruction. For his purposes, Gibbons uses individualized instruction as the generic term to include individual instruction. In this research, the opposite position is taken: individual instruction is the generic term and may include individualized instruction. In extension education, there is no reason to assume that instruction is always modified in some way from group instruction to suit individual purposes. (Gibbons is primarily concerned with youth education.)
Due to the confusion in the literature between individual and individualized, it might be useful to revert to more basic definitional forms.

In adjectival form, the word individual means "intended for one person, designed to accommodate one person, applying to one person" (9). The transitive form of the verb individualize means "to adjust or adapt to the needs of one person; to adjust to the special circumstances of one individual" (9).

The noun instruction means "the action of instructing or teaching; the imparting of knowledge or skill; education; information" (10). The verb instruct means "to furnish with knowledge or information; to teach, educate" (11). Etymologically, there is a difference between the words instruct and teach (12) but no such distinction is implied here.

Individual instruction is the teaching of one person. It is that form specifically designed for the individual learner. It is instruction intended for the needs of one person. Intention of the instructor seems to be a key to the definition. Individual instruction indicates specific intention of teaching one person at a time whether face-to-face or at a distance. Ramifications of this definition are developed further in Review of Literature, Background and Theoretical Framework chapters below. Individualized instruction indicates the intention to adapt the teaching in some way for the consumption or edification of one learner. Of necessity, it is of peripheral interest here.
Group instruction and other modes not specifically intended for one learner are not of interest in this study. The central interest of this study is **individual** instruction in extension education.

**Extension education**

George Miller tells the story (13, p. 15) of an able but inexperienced teaching assistant who was asked to deliver a few lectures in an introductory psychology course while the professor was absent. The assistant decided to begin with a short definition of the subject. "When the professor got back to his classroom two weeks later he found his conscientious assistant still struggling to define psychology."

Extension education has been variously described as an idea, a state of mind, an applied art, an area of social practice, a profession, an organizational entity, an academic discipline or an educational philosophy. A certain degree of caution is suggested in striving for a "short definition" of this complex subject.

Extension education is often seen as a special type of adult or continuing education. Institutions, organizations and individuals may extend education. Businesses, industries, and governments can all extend education and training. Perhaps most frequently the reference is to an educational institution. In this context, extension education is:

A service by which the resources of an educational institution are extended beyond its confines to serve a widely diversified clientele within the state or region regarded as the constituent area of the institution; may include a wide range of activities such as evening classes, short courses, exhibits, TV courses, correspondence courses, conferences, seminars, and institutes (14, p. 230).
University extension is one form of extension education of major interest in this study. As a form of extension education, university extension consists of two major categories: general extension and agricultural extension. A short discussion of the development of these two categories follows in the chapter of this study entitled "Background."

Definitions of university extension frequently take note that its clients are not full-time, university students:

Extension is an idea as well as an operating organization because university extension is literally the concept of extending the university's resources to those who are not regular, full-time students (15, p. 442).

Britannica likewise expresses this notion succinctly in describing university extension as a "...division of an institution of higher learning that conducts educational activities for persons (usually adults) who are not full-time students" (16, p. 280). It also suggests alternative descriptors: "These activities are sometimes called extramural studies, continuing education, higher adult education, or university adult education" (16).

Extension education is the more general term but university extension is perhaps the most visible organized extension activity in this country.

University extension is characterized by considerable diversity. Therefore, after a struggle to formulate a concise definition, there is a strong inclination to agree that:
In the final analysis, a reasonable definition might be the following: university extension is that concept that provides a college or university with a mechanism which enables the institution to provide additional educational opportunities wherever needed, at whatever place, at whatever time, and in whatever form that will utilize the capacities and talents of university personnel (17, p. 488).

While at some institutions, certain educational opportunities for preadult learners are provided through university extension, in this study, university extension is viewed as a specialized form of higher adult education.
REVIEW OF LITERATURE

The literature search was conducted according to the procedure suggested by Borg and Gall (3). No research was found which deals specifically with the topic of individual (or individualized) instruction in extension education by title. Obviously, this does not mean that there is nothing of interest on the topic for extensionists simply because these key words are not used.

The literature reflects an expanding interest in the topic. So much has been written about individualized instruction that an attempt has been made to confine the literature review to items which might be of interest to practitioners in extension education. Weisgerber remarks on the considerable interest in the subject as evidenced by the increasing number of input descriptors available to researchers:

As group oriented instruction gives way to individualization in the schools and colleges, it is understandable that the new approach takes many forms and is given numerous labels. Thus, in a recent computerized search of the ERIC file for reports or projects dealing with 'individualized learning' it was found necessary to access the file by some forty-nine descriptors, all variants of the basic theme (18).

It is interesting to note at this point that a cumulated volume of the Education Index lists individual instruction as a major topic but it bears this notation: "See Individualized instruction" (19, p. 408). A recent monthly volume of Education Index omits the entry of individual instruction altogether, but lists various subheadings under "Individualized instruction" (20, p. 47). This is one illustration of the current
necessity of concern for the individualized form in this study.

Research and commentary on individual instruction of possible interest to extensionists may be grouped (for convenience) under at least three educational topics. These are: method, technology and independent study.

Instructional Method

Reference to individual instruction occurs frequently in the literature of continuing education in relation to teaching "method." Sometimes words such as strategy, format, project, etc., are used instead of method.

In this section, the relative emphasis on individual instruction is often reported in contrast to other methods of instruction or other educational concepts.

Coolie Verner has tried to establish some order in what constitutes instructional method in adult education. Verner's classification seems to be widely quoted but not always followed. He distinguishes between method, technique and device in the instructional process (21). Verner defines method as the:

...relationship established by the institution with a potential body of participants for the purpose of systematically diffusing knowledge among a prescribed but not necessarily fully identified public (p. 9).

He then defines technique as:

...the relationship established by the institutional agent (adult) educator to facilitate learning among a particular and precisely defined body of participants in a specific situation (p. 9).
Finally, he adds a third category of mechanical instruments or environmental factors called devices.

According to Verner's classification, it would presumably be acceptable to view individual instruction as method and individualized instruction as technique.

Verner informs us that "The stratification of systematic learning relationships tends to assume three primary forms within society:

1. individuals in isolation
2. individuals in social groupings
3. the social system itself (p. 13).

Verner asserts that there are three main types of instructional methods: individual, group and community. He clarifies that:

Individual methods are those in which the relationship established by the institution with the potential learner is on a one to one basis. The focus of these methods is on the isolated individual where it is not possible or, perhaps, desirable for him to become a member of a learning group (p. 13).

Verner suggests that "At this level the primary orientation of the method is toward affecting changes in the behavior of individuals" (p. 14).

Verner and Booth (22) indicate that "The method of education identifies the ways in which people are organized in order to conduct an educational activity" (p. 68). They further comment on the utility of the individual method:

In some cases the nature of the learning task may be such that the educational activity will be more successful if participants are handled individually rather than in groups. Whatever the causative factors, the design and management of the learning experience is accomplished through
the use of methods that serve one individual at a time. Such methods include correspondence study, directed individual study, apprenticeship, and internship (p. 69).

In discussing Verner and Booth and their position on individual instruction and other methods, Schroeder (23) makes an interesting comment which might offer some insight on the relationship between individual and individualized instruction:

Youth education has been dominated by the so-called class method (that is, a teacher and pupils in a classroom) while adult education, not being so institutionalized, finds itself using a rich array of methods (for example, travel, study groups and discussion groups).

Perhaps the same explanation would hold to some extent on the nature of individual instruction. If so, it tends to help clarify why youth education is concerned more with individualized instruction while adult education may be concerned with either individual or individualized forms.

Houle (24) has constructed an elaborate system of educational design. He believes that learning situations in adult education are always unique but that they can be classified into categories (p. 227). "These categories may be broadly divided into those which occur on an individual, a group, an institutional, or a mass basis." (Italics in original.)

In total, Houle identifies eleven categories of educational design (designated from CI to C11) related to the four major divisions. Two categories appear under his Individual division:

CI An individual designs an activity for himself.
C2 An individual or a group designs an activity for another individual (p. 44).

In regard to Cl, Houle makes this comment on Independent Study:

Since independent study is, by definition, a wholly self-guided way of designing and controlling an educational activity, it can be examined in depth only by one who analyzes his own experience or that reported to him (p. 94).

Houle appears to be convinced of the importance of independent study, despite that fact that little is known about the frequency or nature of this form in the general society. In Houle's words:

The available evidence suggests that self-directed learning takes place in a number of different ways. For some people, it is an inherent part of the pattern of life itself (p. 92).

Houle relates the concept of individualization to independent study in this way:

As for individualization, the independent learner sees it in a special context. Unlike other situations where an educator must constantly consider how to reach each participant, the self-guided student has only himself to think about (p. 96).

In Houle's classification, the other category (C2) related to the individual division is tutorial instruction:

Tutorial teaching exists in many forms and in some fashion or other it is universal to human experience (p. 96).

Houle informs us that "In tutorial teaching, the dyadic relationship has been worked out in many different ways, some of which have taken established form..." (p. 97). He discusses in some detail four patterns of tutorial teaching which he says are among the most prevalent forms today:
1. straightforward exposition,
2. programmed instruction,
3. coaching,
4. nondirective instruction.

Thus, two important forms of individual instruction exist in Houle's system, independent study and the tutorial. In fact, Houle does much to reduce the confusion surrounding the distinction between individual and individualized learning. What might be called "individual" instruction as approached in this research, consists of two categories relating to his major individual division of educational activity.

On the other hand, "individualization" is one of a number of "...elements which combine together into an educational format" (p. 227). Houle states that these elements can include methods (or techniques), schedule, sequence, resources, leaders, social reinforcement, individualization, etc. Houle correctly points out that individualization may occur in mass education. Houle even provides a glossary of adult education terms, in which he defines individual as a "single human being" and individualization as "the adaptation of a process to meet the requirements of each of the persons which it is intended to serve" (p. 232).

Knowles (25) prefers the term "format for learning" instead of method, but he says he uses this term with precisely the same meaning as Verner's method (p. 133). Knowles discusses three of these formats: individual, group and community development.
Knowles proposes that the design and management of learning activities in the individual format may include (p. 269):

-- An individual apprenticeship or internship arrangement;
-- A correspondence-study course;
-- A clinical counseling series with an individual;
-- A directed study program with an individual;
-- A programmed-instruction sequence;
-- A supervisory relationship between a supervisor and a subordinate.

He states that some formats do not require the physical presence of the learner and an institution and "...so are particularly appropriate for disabled, elderly, incarcerated, or geographically isolated students" (p. 134).

Kreitlow describes four broad "patterns for learning" which include mass, large group, small group and individual learning patterns (26). Kreitlow comments tersely that "Patterns for individual instruction will be considered inefficient by some people. It particularly will be considered so by those who look at dollar values rather than human values." He concludes that if adults are really lifelong learners, most will need individual instruction at some time. He suggests a variety of ways of organizing for individual instruction including correspondence study, apprenticeship, internship, adult programs in the arts, and private conferences.

Nadler believes that one way of looking at training methods in business is "...(1) group learning situations; (2) individual learning situations; and (3) the impact of educational technology" (27). He states that the most frequently used method for individual learning in business is on-the-job training or OJT "...which is a system whereby
the learner is counselled and coached while he works." He also mentions assigned reading and job rotation as techniques for individual learning.

The preference for individual instruction by adults was investigated by Blackburn (28). His study centered around "method orientations" which were classified as group or individual. He defined method orientation as "preferences expressed by an adult selecting a method through which to become involved in educative behavior." His findings indicate that "Group method orientations were expressed by the majority of respondents. The proportion of group method orientations tended to increase with increased formal education and family income but decreased with advancing age. Past experience with methods tended to be positively related to method orientations."

Howard (29) searched for examples of individual instruction in Arizona and was able to locate several applications of this mode to economically, socially, or mentally disadvantaged adults. Evidently some of these efforts produced excellent results in places such as the Phoenix Opportunities Industrialization Center and the Arizona State Mental Hospital. She reports that "In still another kind of educational setting, two prisoners who were paroled asked if they could stay on and complete their courses."

Deep has explored work with individualization of instruction for adults in basic education situations and reports that "The heterogeneity of adult learners in ABE has created a need for an individualized learning program designed to meet the specific goals of each student" (30).
In higher education there appears to be a rising interest in alternative forms of education or non-traditional movements, e.g., "open" learning, "without walls," external degrees, etc. The Carnegie Commission on Non-Traditional Study analyzed the use of individual instruction methods (along with other methods) in existing non-traditional programs in higher education. They found that the method of instruction used by the highest percentage of the 351 selected programs was the traditional classroom lecture. In other words, individual instruction methods were not used as often as the traditional classroom lecture. However, the study did indicate that individual methods are in use. For example, the "tutorial" (31, p. 98) did receive "much use" in 19% of the programs.

Some sectors of extension education are frequently concerned with informal education. Knowles mentions "individual investigation" (32, p. 40) as a method of instruction for informal adult educational situations. He states that this may be either directed or undirected. He sees this as one of the principal methods of teaching:

In individual investigation a student undertakes to learn something through his own efforts. The most universal method of learning is undirected real experience, a process of trial and error or success (p. 46).

He states that guidance can greatly increase the efficiency of individual investigation as a method of learning.

In agricultural extension, several writers discuss the individual method. Shannon and Schoenfeld (33) state that "Personal farm and
home visits are basic agricultural extension methods. Letters and telephone calls are sometimes substituted" (p. 34).

Moeckel performed a study of agricultural instruction among adult farmers in Michigan. His findings (34) indicate that certain benefits do accrue from the individual mode.

Wilson and Gallup (35) conducted a classic study of methods of extension teaching. They point out that "The methods employed in extension teaching may be classified in several different ways." They prefer to use a classification according to form and use. Instruction may proceed in a written, spoken and visual (or objective) form. The use category may involve individual contacts, group contacts or mass contacts. Under individual contacts they list farm and home visits, office calls, telephone calls, personal letters and result demonstrations.

Boone (36) states that "The methods utilized by Extension adult educators to provide learning experiences for clientele can be classified as individual contact, group and mass media methods" (italics in original). He states that the individual contact methods are those "...in which the Extension educator and the individual learner interact in relation to a problem." And these may include farm visits, home or business visits, personal office calls and correspondence, according to Boone.

Sanders discusses educational method in the Cooperative Extension Service. He asserts that the "first function and primary responsibility" of the Cooperative Extension Service is to provide instruction for its clients. He makes this observation (37, p. 111):
Persons learn individually. However, persons may be contacted individually, in groups, or through mass-communication media. Learning experiences provided individually include visits, office calls, telephone calls, mail requests, and answering sets.

Trent and Donohue (38a) bring up an interesting point relative to the individual mode when they indicate that "One of the most important roles of the County Extension Agent is that of a counselor. Yet few agents readily admit how much their responsibilities and actions parallel those of counselors." They say that:

Counseling in its broadest form is a unique method of individualized teaching. It has been used by county Extension agents since the beginning of Extension work. It is a major component of such methods as farm and home visits, office calls, telephone calls, and informal conversation.

They further assert that although "Counseling may be the most important single role of the county Extension agent..." it may well be an area in which he has received the least professional training.

A number of writers have noted the close association and similarities of individual instruction and counseling. Some apparently feel it is appropriate to interpret individual instruction as a form of counseling. For example (38b), McKeachie discusses "Counseling and Individual Instruction" (p. 170) and believes that individualized teaching is one important component of the counseling process. But, as Trent and Donohue indicate, perhaps not all extensionists are willing to assume counseling duties, particularly within the therapeutic reference.

Houle has noted that counseling may achieve increased importance in university extension in the future. Houle addresses (39) the question
of how university extension is to cope with mushrooming social and individual needs:

Some new social institutions may be needed. One of them is surely a counseling and referral service which can help adults find the programs they need and then serve as friend and advocate in helping its clients to complete these programs.

In this section we have seen that the individual mode of instruction occupies an acknowledged, established place in adult education and extension. Often it appears in relation to contrasting schemes and usually is related in some way to educational method.

Additionally, individual instruction is approached in the literature in two other closely related areas of education: technology and independent study. These two topics are considered below.

Instructional Technology

Reference to individualized learning occurs in the educational literature in relation to instruction which is mediated through technological innovations. Educational technology and media ostensibly have great potential to enhance individual instruction through the use of devices of various kinds.

Armsey and Dahl (40a) discuss some of the ideas relating to definitions and terminology in instructional and educational technology. Apparently instructional technology is a more inclusive term than instructional media (40b). The development of instructional technology is related to the audiovisual instruction movement (40c).
A trend toward increasing technological sophistication is in evidence, culminating in some cases with the use of the computer as a teaching machine. Gross (4) observes that "Differences in learning styles or preferences are recognized through the introduction of such alternatives as computer assisted instruction (CAI), the use of peer tutors and faculty mentors, and experimentation with a wide variety of learning media and teaching strategies."

The computer as a medium of instruction or a technological adjunct to instruction is also discussed by Johnson:

"The computer looms as potentially the most significant of all the products of the technological revolution because of the range of educational tasks it is capable of performing" (4la). He goes on to note that experience in the use of the computer has shown that its greatest benefit to education "...probably lies in individualizing instruction."

Suppes (4lb) believes that:

The single most powerful argument for computer-assisted instruction is an old one in education. It concerns the advantages, partly demonstrated and partly conjectured, of individualized instruction.

Suppes comments on the history of individualized instruction in conjunction with the use of the computer in education. He claims that "The concept of individualized instruction became the core of an explicit body of doctrine at the end of the 19th century, although in practice it was known some 2,000 years earlier in ancient Greece." The aristocracy relied on the tutorial for many centuries. The tutorial form enjoyed extreme popularity at Oxford and Cambridge, according to Suppes. He
believes that modern criticisms of the individualized approach are largely directed at its economic inefficiency rather than its intrinsic merit, and concludes that computer assisted instruction is a "...truly revolutionary function..." of the computer which permits much easier individualization of instruction.

Richman and Nagel (42) relate the concept of "competency-based" instruction to adult education and university extension. They discuss various ramifications of competency-based instruction such as the instructional module. One of their projections is that "Emphasis will be on those packages of instruction designed by continuing educators that utilize media for individualization of instruction."

Van Druff (43) feels that "learning laboratories" have many advantages as a way to individualize adult instruction. He argues that traditional learning situations are too limited in time and space but the learning lab can provide a more accessible learning environment for the individual needs of adult students. He suggests a mobile trailer which could travel to various locations during the week for the benefit of adult learners. "We have all heard and have seen mobile libraries. Then why not mobile Learning Labs?" (43).

Valentine has worked on individual instruction for the Bell Telephone Laboratories (44). He has analyzed the differences in conventional instruction and individualized instruction in considerable detail and reports that "The focus of the instructor as the key person in the classroom is removed in individualized instruction, and the attention of the environment is shifted to the learner. The main form
of communication is not instructor to learner, but learner to
instructor. Formerly, the learner had to observe, analyze and integrate
the responses of the instructor. In individualized instruction, the
learner responds most of the time and the instructor observes, analyzes
and interprets the responses of the learners." Valentine acknowledges
the obvious advantages of individualized instruction when a quick
training package is needed. He states that individualized instruction
has been used very successfully by the Bell System in all kinds of
courses, ranging from pole-climbing to secretarial training and
"...there is even a plan to develop individualized units for teaching
vice-presidents how to interview affluent stockholders."

Psychological Abstracts now contain a major subject-index heading
on "Individualized Instruction" (45, p. 392). A review of these
Abstracts indicates that the U. S. Air Force has done some work on the
individualization of instruction including computer work. One report
even "Formulates a theoretical basis for a model of individualized
instruction" (46, p. 509). The authors report that they use symbolic
logic and set theory as conceptual tools and apply their theory to an
existing Air Force course.

Pilcher (47) maintains that "...technology, with its impact upon
man's interrelationships and social and organizational structures, has
already caused us to rethink our comfortable educational configurations
of the past." He says it is conceivable that learning consoles in the
home could provide individual instruction. These might consist of
"...viewing screens connected to a central computer through a statewide
grid which will give the individual family telephone dial access to continually updated central educational data banks, including library centers."

In 1972, the National University Extension Association (NUEA) conducted a study to obtain information about technology in university extension. The survey was concerned with technology in general, but a number of the replies suggest that some institutions might view technology as a way to facilitate individualized instruction. For example, at Pennsylvania State University a CAI program for a teacher education "...provides individualized instruction that no teacher can match in a classroom or lecture." At Tuskegee Institute, "Learning modules for individualized instruction are being created...", and at Kansas State University a three year pilot project was conducted by the Cooperative Extension Service on the use of videocassettes including "...small tape formats for cable, individualized and group presentations" (48).

Katz observes that "It seems rather ridiculous in this age to travel to a particular building for certain learning when this learning can be obtained in a number of other ways" (49, p. 44). He thinks that future systems can include closed circuit television interfaced with computers, tapes and telephones. He forsees three-dimensional color displays for the individual learner, through the use of holographic techniques. He makes this speculative remark on the future of learning:

Educators find that when a student has a one-to-one relationship with another individual a maximum of learning can take place. Since a one-to-one relationship is not feasible economically or practically as a
base for individualized learning, a learning box will be developed so that the student may interact with this learning system (p. 106).

It would seem that technological advances would permit enormous strides in individual instruction in non-traditional higher education programs. Yet, research by the Carnegie Commission (31) indicated that "Not only is there little acceptance of electronic methods by program planners, but desirability of new methodologies is not evident to would-be learners" (p. 95). The Commission says of the "new technology" that "The whole field is becoming so complicated and the choice of devices so broad that decisions to be made about future trends and priorities are difficult" (31, p. 97). However, the Commission concedes that the potentials are breathtaking, despite the extremely high initial cost of some systems.

Diamond has studied the cost analysis and accountability involved in academic redesign (50). He offers this advice on individualizing instructional programs through the use of technology:

As more emphasis is placed on independent study and on less-regimented time frames, there is an increasing need to use inexpensive, modular instructional materials such as programmed booklets, manuals, audio tapes, etc. The more expensive but less flexible techniques of film and television should be considered when a combination of sound and movement are essential. Greater flexibility of instruction is accompanied by increased use of independent learning laboratories as well as greater reliance on the reserve desk of the library.

Axford touches on some of the human problems associated with the rise of instructional technology. He notes that many writers have warned that the rapid growth of educational technology has great
potential for evil; the "spiral curriculum," the "global village" and the "tribalizing" concepts may suggest the possibility of influencing the minds of everyone in a negative way. "However, the educational technologies may also have a different, reverse effect. They may also lead to the individualization of learning" (51). Educational technology has the potential of making individual instruction convenient, interesting and effective. Axford states that it is now possible to bring an enormous range of stimuli to be experienced by individuals in privacy and "One immediate consequence is to bring about widespread plans to individualize learning" (51).

Instructional technology is sometimes used in connection with correspondence courses and independent study. Let us turn now to this topic in this literature review.

Independent Study

Some writers consider independent study under instructional method, while others approach the topic directly as a separate area of analysis.

If self-instruction is conceived of as a form of independent study, it may be either of the directed or non-directed type. Some adult educators are interested in the latter type and give it various designations such as the autonomous learner category or the self-directed study category. It is comparable to what Houle (24) calls his C1 category mentioned above. (Learners in this category may not even engage an extension service in their learning efforts.)
Dressel and Thompson define independent study in the higher education context: "Independent Study is the student's self-directed pursuit of academic competence in as autonomous a manner as he is able to exercise at any particular time" (52, p. 1). They state that learning projects can be individualized without being independent, but that independence requires some individualization.

Dressel and Thompson (52) contrast group independent study with individualized independent study. They also discuss independent study versus individual study and make this penetrating observation:

Programmed materials and mechanical equipment provide possibilities for individual study which can be highly structured in advance. In some ways it is more dependent than the average lecture-and-text centered classroom. It surely can be a sound way to promote learning, but calling it independent study only compounds the confusion of definition... (p. 67). (Italicics in original.)

Lougharty (53) expresses the thought that "Independent study, which closely resembles later extrainstitutional learning, is considered an appropriate preparation for tomorrow's self-initiated, life-long learning." In fact, Lougharty thinks that the demands of society in the future will dictate a need for an education system characterized by individualized instruction -- purely as a matter of survival.

Wedemeyer (54) is interested in various facets of independent study and the individual tutorial including distance education. He stresses the fact that the normal instructive processes are at work in independent study. He believes that the new media can do much to enhance independent study and convey instruction:

However, if media (CCTV for example,) are employed merely to replicate a regular class without broadening
opportunities and shifting responsibility and freedoms to the learner, the system cannot be defined as independent study (54).

Correspondence instruction is often taken to be a form of independent study (55). Mathieson admits that correspondence study has its limitations and shortcomings for teaching adults, as does any educational procedure, but he thinks that "It is psychologically sound since it aids in regaining confidence and overcoming fear or embarrassment on the part of the enrollee who has a background of failure in the traditional classroom" (56, p. 32). He refers to "...a burst of development in correspondence study itself and in the larger emerging field of independent study, involving not only the use of new instructional technologies but new programming areas and learning structures as well" (p. 75).

Wedemeyer and Childs (2) identify three developments toward individualization in American education: individualization within groups, individualization of subject matter content, and individualization in continuing education. They state that individualization is really a threefold problem as it has developed in the U.S., and correspondence study can be adjusted favorably to all three. They suggest that correspondence instruction is "...sufficiently flexible to provide simultaneously for individualization in terms of student ability, variety of course offerings, and adjustment to time and place of study" (p. 15).

Kelly (57) cautions that:
Correspondence education is not self-study in the sense that self-study provides no instructor services. Examination and counseling services are not part of many self-study situations. Self-study materials including sequential lessons and self-administered examinations are available, but these are not considered correspondence courses.

Grabowski (58) echoes the view on the distinction between instructor directed and self-directed study: "The recent upsurge in searching for alternative methods of obtaining bachelor's degrees has led to various forms including independent study programs, or more properly, directed self-study programs."

Hartnett says that the phrase "non-traditional study can include a vast array of educational programs. It may refer to learning which takes place under the auspices of an institution but differs in a significant way from other education offered there: "By this definition, correspondence instruction, which has been available in this country for years, would be regarded as a form of "non-traditional study" (59).

Gould has remarked (60) that "Without individualized learning non-traditional study becomes no more than a shadow of what it might be." Presumably independent study is a significant way to individualize instruction. Gould and Cross also report on a definition of non-traditional study of parenthetical interest here:

An alternative definition used in some Commission subcommittees is that non-traditional study consists of a set of learning experiences free of time and space limitations, organized so that the student may acquire new skills or attainments extending his personal, intellectual, esthetic, or vocational development (61, p. 14).
University extension, of course, has long had an interest in place-time free instruction. This might have applications for the use of independent study in extension, especially to the extent that university extension programs become involved in non-traditional education.

Houle has long had an interest in the autonomous learner (62). Kaplan (63) reports that Houle conducted "An Exploratory Study of the Self-Educating Person" at the University of Chicago in 1958. Allen Tough, who was one of Houle's students at Chicago, recognizes that "...all ways of learning and changing are important" (64, p. 31). Nevertheless, Tough seems to express special interest in one-to-one and self-planned learning. He has studied self-planned learning in considerable depth, reporting that:

> Throughout history, and throughout the world, self-planned learning has been common and important...
> 68% of all projects in our 1970 survey were self-planned and, in addition, most of the mixed projects (another 9% of all projects) were partially self-planned (p. 92).

Tough presents fairly rigorous definitions of what he calls learning episodes, the concept of the planner, and the learning project in connection with his research. Furthermore, Tough asserts:

> Over the years, several educators have discussed various learning efforts that are somewhat similar to self-planned learning projects, but not identical. They have labeled their phenomena in various ways: self-education, self-instruction, self-teaching, individual learning, independent study, self-directed learning, self-study. While engaged in such efforts to learn, individuals have been called autonomous learners, self-propelled learners, self-teachers, and autodidacts (p. 92).
Tough's work may be of considerable interest to extensionists if they are concerned with any type of self-instruction. According to Tough, this mode will achieve increasing importance in the future.

Various institutions and organizations are now expressing interest in the independent learner, e.g. the Council on Library Resources, the National Endowment for the Humanities, the U. S. Office of Education and the College Entrance Examination Board (65).

The Office of Library Independent Study and Guidance Projects of the College Entrance Examination Board is sponsoring a national effort to facilitate independent study in the library:

The basic aim of the project is to assist public libraries to become learning centers for adults whose learning styles and interests are generally not compatible with the constraints imposed by traditional educational delivery systems (66, p. 4).

So far, eleven major libraries throughout the country are participating in the project. Perhaps library independent study is a topic of interest to university extension, especially if former clients or potential clients are involved. It appears that library extension and university extension could have very similar interests with regard to independent study.

As Hastie (67) reminds us, "Reading is a way of learning, changing and developing. ...reading allows an individual to learn from the experiences of others and permits knowledge to become cumulative."

(Italics in original.) He sees reading as a way to provide individual instruction and augment other activities in training situations. He
discusses both required reading in adult training as well as discretionary reading for self-development. Houle (62, p. 83) adds that:

Reading is the skill which supports all other methods of learning, enlarges the horizons of the mind, permits us to move freely across space and time to establish contact with those with whom we have a community of interest, and corrects the distorted or narrow views which we often get from first-hand observation and from other methods of learning.

A number of writers have indicated the utility of reading in independent study. In correspondence study, this is obvious, but reading can also provide a principal technique of instruction for the self-directed learner. This might be of interest if extension divisions provide anything resembling an organized reader's program or a reader's advisory activity.

In agricultural extension work, the agricultural handbook, the bulletin and the periodical might often be used to augment direct, individual instruction or serve as stimuli in self-directed learning situations.

This concludes the section on Independent Study.

Overview

A short summarizing statement will be attempted in this final section of this chapter on Review of Literature. The overview of the literature in this area indicates that references to individual and individualized forms are intertwined.

The highlights of the material tend to relate to some aspect of teaching method, technology and media, and independent study. The
picture emerges that these classifications are of interest to persons concerned with teaching one adult in a variety of situations.

Individual forms appear to occur at all levels of adult education — both in and out of extension. The individual method is frequently mentioned in contrast to other methods. There appears to be growing use of instructional technology for individual and individualizing purposes with the attendant potential for combined forms. The use of the correspondence course and the importance of reading for the adult independent learner are also described.

We now turn our attention to these forms as they apply more specifically to extension education. At this point the central question becomes, what is the status of individual instruction in contemporary extension activity? Before this is approached, it might be well to consider extension in a historical perspective.

As noted, university extension is of major interest in this study. It is perhaps the most significant form of organized extension education in this country. We now move to a brief discussion of the background of university extension and the place of individual instruction therein.
BACKGROUND

The purpose of this chapter is to provide a very limited historical perspective on the beginnings, development and characteristic forms of instruction in university extension. University extension is a prevalent form in the United States and includes both general and agricultural extension.

Beginnings

University extension began in England (68). Most observers trace its origin to Cambridge University.

The university was first extended through the lecture method. A system of lectures was developed under university auspices to serve audiences of various types. Draper (68) indicates the early group focus of extension through lectures, meetings, tutorial classes and summer meetings.

The first university extension teaching is commonly ascribed to James Stuart, who was a Fellow of Trinity College at Cambridge. His first extension lecture was delivered to the membership of the Manchester Board of Schoolmistresses. The lecture was given at Chorlton Town Hall on Thursday, October 10, 1867, with "a good attendance." The topic was the history of astronomy (69).

Welch reports of Stuart that "He announced his purpose as not 'so much to give detailed information as to arouse in his hearers a desire to learn something about science'" (69, p. 26).

Thus, the idea of extending the university was imported from England.
Grattan (70) provides an account of how university extension crossed the Atlantic. In the U.S., university extension also first assumed the extension lecture approach. The University Lecture Association and the American Society for the Extension of University Teaching (precursors of the NUEA) both appear to have favored the method of group instruction by lecture.

William Rainey Harper was instrumental in introducing individual instruction to university extension through the medium of correspondence teaching. Harper had worked on problems related to correspondence instruction in the Chautauqua movement. He later became president of the University of Chicago and "...gave extension equal status with the four other university divisions..." (70, p. 190).

Harper appears to have exerted considerable influence over the beginnings of university extension in this country:

The plan of extension teaching that President Harper developed at the University of Chicago was distinctive in three respects. It established a formal permanent division of the University; second, it integrated its activity with that of other divisions of the University; and third, it offered college courses for credit by mail and in extension classes. Here was a development which represented a distinct variation from the English system (71, p. 4).

Charles R. Van Hise was an extension professor at the University of Chicago from 1892 to 1903. He became president of the University of Wisconsin in 1903 (71). His "Wisconsin Plan" provided strong influence for extension outreach teaching. His work is marked by considerable enthusiasm in promoting university extension as "a new thing in the world" (33, p. 15).
Van Hise opened the organizing meeting of the NUEA on March 10, 1915, in Madison. "His keynote remarks focused on the service function of the University in carrying knowledge to the people" (71, p. 1). Wisconsin was already engaged in correspondence instruction when the NUEA was organized. In 1915, W. H. Lighty was serving as "secretary of the correspondence study division at Wisconsin..." (71, p. 7).

Bittner and Mallory (72) provide a similar account of the beginning of correspondence study in the Extension Division at the University of Chicago. Moreover they state that "The contagion of long distance teaching, with its ideal of service to all, spread within a few years to other institutions" (72, p. 25). They also point out that "The earliest organized work by the correspondence method of which we find record was in Germany" (p. 10). But they state that "In England the movement to extend educational opportunities beyond campus bounds did not at first take the form of correspondence instruction" (72, p. 11).

Hall-Quest (73) gives a detailed analysis of early university extension activities. He distinguishes between systematic group instruction and systematic individual instruction. He takes note of informal individual instruction, for example, "guidance in individual reading" (p. 60). He also describes the efforts of Herbert B. Adams of Johns Hopkins University to import university extension from England.

True (74) provides a comprehensive discussion of the beginnings of agricultural extension in the United States. True suggests that farmers institutes and home demonstration work were forerunners of cooperative extension. The Cooperative Extension Service is the main form of
agricultural extension in this country. The Smith-Lever Cooperative Extension Act established the Service. "The bill was approved by President Wilson May 8, 1914" (74, p. 113). The Morrill Act of 1862 had already established "colleges for the benefit of agriculture and the mechanic arts" (37, p. 424) and the Smith-Lever Act provided for the association of agricultural extension with these "Land Grant" institutions. The Smith-Lever Act also formalized the principle of cooperation at the national (through the United States Department of Agriculture), state and county levels. The bill provided for "...diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics..." (74, p. 114).

The Smith-Lever Act provided Federal legislation which authorized the placing of at least one itinerant teacher or demonstrator in each agricultural county. The itinerant teacher could travel to the farmstead and instruct by a system of demonstration through personal contact with the individual farmer.

True (74, p. 58) discusses the development of certain events in Texas which provided the basis for this system of demonstration and asserts that "The originator and leader of this movement was Seaman Asahel Knapp (1833-1911)...".

Knapp had been confronted with the problem of how to reach the individual farmer with scientific information. His opportunity came as a result of a weevil infestation in the Texas cotton fields. Grattan (70, p. 205) clarifies:
The experience in the campaign against the boll weevil showed clearly that Knapp had really hit upon the way to reach the dirt farmer, hitherto considered a rugged individualist pretty much impervious to the blandishments of the government experts and also of private philanthropists seeking to ameliorate the farmer's lot by making him a better farmer.

Grattan says that Knapp saw the necessity of matching teaching method to local conditions in the agricultural South.

Bailey states that in 1905, Knapp was busily "taking agricultural knowledge right out to the farmer on the farm" (75, p. 217). Knapp is credited with inventing the farm agent system and the demonstration method. And, says Bailey, "It was the ubiquitous Theodore Roosevelt who was first to give impetus to the idea that it would be a good thing to extend Knapp's demonstration work to farmers everywhere throughout the nation" (p. 244). Promotion of Knapp's ideas ultimately resulted in passage of the Smith-Lever Act, which (by linking agricultural extension to university extension in the Land Grant institutions) insured the rise of the instructional farm visit and the "home" demonstration.

Hall-Quest (73) suggests the individual nature of home demonstration work. The home economics agent could enter the home and work directly with the housewife, giving instruction in all aspects of domestic science. "It does for the home what the institute does for the farm" (73, p. 66). Ultimately, the family method of instruction would gain importance in home economics.

Another individual who provided stimulus to agricultural extension teaching was Perry G. Holden. Holden's vigorous outreach philosophy is exemplified by his comment reported by Davidson, Hamlin and Taff (76):
I had a strong feeling that every person that lives in the State is in reality a pupil or a student of the College and that the College must see to it that everyone receives some direct help from the College and if this was true, that there was only one way by which it could be done and that was take the College to the people and help them where they are, as they are, under their own conditions with their own problems (p. 16).

Holden was referring to Iowa State College and made the statement while Professor of Agronomy at that institution.

Incidentally, Morgan (77) reminds us that Seaman Knapp was the second president of the same College. Knapp was an employee of the United States Department of Agriculture when he worked in Texas, however. He was a towering figure among early agricultural educators.

Bliss (78) reviews the beginnings of organized extension work in agriculture in Iowa and apparently the very first efforts were group oriented. He mentions especially the short course, corn trains, field days and a variety of other teaching techniques. Nevertheless, the emphasis on outreach forshadowed the individual instructional techniques that were to come, especially the farm visit and the home demonstration. Bliss states that "...the county farm demonstration and the corn trains had stimulated the desire of farmers for additional information" (78, p. 44). Perhaps it is reasonable to assume that individual instruction on the farmstead might have somewhat the same effect and eventually stimulate group participation.

Development

Extension has a fascinating history. But it is not always easy to
keep the significance of individual instruction in sharp focus in extension development.

Creese reviews the roles which extramural divisions assumed, including credit courses on and off campus, non-credit courses, and various forms of formal and informal instruction such as postgraduate, professional and specialized instruction. "Correspondence study, however, has gone its own way, little influenced by the trend toward informal instruction and non-credit courses," according to Creese (79, p. 74).

By 1953, the NURA reports that "It is noteworthy that the method most widely used in this group of institutions was a combination of lecture and discussion activities" (80, p. 128). However, the method of "frequent individual conferences" was also used by some of the 31 member institutions.

A subsequent study by the Petersens (81) reveals that "Group discussion is the basic method of adult education," but the authors concede that:

> Over the past several decades the development of new communication media has made possible a still greater proliferation of adult-education programs. Teaching by correspondence, one of the oldest activities of universities, has remained an important and growing part of extension programs. Most correspondence courses attempt to duplicate for individual students some of the regular campus offerings (p. 86).

Haygood analyzes the development of university extension from a number of perspectives such as program areas, organization and financing. He notes the variety of programs which have developed
including store front university extension centers, independent study programs and community learning centers (82).

The NUEA has developed into the "...major national association of public and private institutions offering extension and continuing education programs" (83, p. 5). Not all NUEA member institutions provide correspondence instruction on a routine basis. However, correspondence instruction as a form of independent study appears to be firmly established (83).

Knowles states that higher adult education has evolved into three main "tributaries" in this country (i.e., general extension, agricultural extension and the evening college movement) and offers this comment on their development:

The only true perspective on higher adult education in the United States is kaleidoscopic, for its evolution has consisted of shifting patterns of variegated bits and pieces (84, p. 9).

Colleges and junior colleges can extend education, but the development of the two forms of university extension is of special interest here.

Brunner and Yang (85) bring into perspective the development of the office call and the telephone call as individual instructional method in agricultural extension. They explain that in the early days of extension the "word-of-mouth instruction" (p. 119) was much relied upon and the farm visit established much good will and confidence in the agent:

However, this individual counseling with respect to specific, detailed practices is very time consuming. It might take years to visit every farm in the county just once. Furthermore, visits can and do sometimes degenerate into personal service by the agent (p. 119).
Brunner and Yang still see the need for office calls and telephone calls and state that some conditions, such as poverty-stricken areas still call for farm visits. They appear to be suggesting that the method demonstration might be more appropriate for the assembled group but the result demonstration may be more appropriate for individual instruction (85). Both can, however, be used for either group or individual instruction.

Kelsey and Hearne (86) believe that the farm and home visit are relatively expensive in time and money, but remain the most basic of all methods in extension. They make this rather strong assertion:

Basically the individual-contact methods furnish the most direct opportunities for influencing people. All the other tools of group and mass procedures are dilutions or compromises created by the pressures of necessity. We must reach more people, reach them more often, and keep down the cost per contact (p. 273).

There appears to be a certain amount of nostalgia in extension history surrounding the activities of the circuit riding agricultural teachers at the family farm, yet their significance should not be underestimated. Miller (87) claims that in one sense the basic educational act of the county agent was the linking of field problems with specialized knowledge. He contends that "Showing people how to do an old task in a new way and encouraging them to observe the outcome of the experiment formed the educational basis of the rural revolution in America."

The Cooperative Extension Service is a uniquely American institution and comprises the "third function" in the Land Grant university system
after resident teaching and research. It is viewed by many as a very successful form of agricultural extension and a major instrument of social change and adult education.

The Cooperative Extension Service ultimately developed into "...America's first (and only) national system of adult education," as Boone (36) says. (Italics in original.)

Instructional Forms

Shannon and Schoenfeld (33) reiterate that university extension has assumed the prominence of the "third function" in American universities following teaching of full time students and research. They emphasize the extreme difficulty in trying to draw generalizations about university extension but they propose that three viewpoints seem to prevail about the essential features of this third function: geographic extension, chronological extension, and functional extension.

Shannon and Schoenfeld explain that geographic extension is sometimes called extramural work or extension education and "...includes the provision beyond campus walls of some of the credit-bearing educational opportunities, or their appropriate equivalents..." (p. 3). Instruction here includes correspondence courses for credit.

The second main feature they describe is chronological extension which is sometimes called continuing education or higher adult education. Here the "...curriculum is designed to enhance the quality of individuals as individuals..." (p. 4). The concept of lifelong learning is important here. Instruction can include numerous forms such as classes, institutes, radio, television and other mass media.
Finally, Shannon and Schoenfeld describe functional extension also known as community development, applied research, educational services, etc. They explain that "...this type of university extension represents the adaptation of university resources to the needs and interests of off-campus youths and adults without regard to age, sex, religion or previous academic experience; such consultation may be rendered to individuals, groups, organizations, and agencies" (33, p. 4).

In the light of these three main features of university extension, plus the review of literature and the background of extension, it is now possible to construct a conceptual "ladder" illustrating the various configurations or instructional forms in evidence. This ladder would include at least the following:

Mass
Community
Institution
Organization
Large Group
Small Group
Family
Individual.

The instructional form in extension is tantamount to the conceptual target of instruction or the intended method of instruction. Of course, our interest here is in the bottom step only. Nevertheless, the investigation is still fraught with complexity because individual
instruction may be face to face, distance, formal-informal, credit or non-credit, on-campus or off-campus, etc.

The individual form under analysis here can now include at least three classifications:

A. Multiple instructors of an individual learner.
B. One instructor of an individual learner.
C. Self-instruction of an individual learner.

According to this analysis, A and B can be either direct or indirect. Direct means that a live, human instructor and an individual learner are contagious and interacting as a social dyad. Indirect refers to instruction not mediated by a live instructor in immediate proximity to the learner.

Category C is not supervised by an instructor and is often called self-directed instruction.

We have seen the problem of classification of various programs and the difficulties encountered in distinguishing between individual and individualized instruction. Further complexity is introduced by the growth of instructional technology. It is true that a human being can learn from a machine, but such instruction is normally activated, prepared, written or programmed initially by one or more human instructors.

One final observation about instructional forms. While other forms of education today are currently exhibiting interest in individualizing instruction, university extension has long shown an interest in individual instruction. Although the precursors of organized extension appear to have been group oriented in their instruction, there is very
early evidence of individual instruction in university extension. Individual instruction is typified by correspondence instruction and private tutoring in general extension and the farm visit and the office call in agricultural extension.

In view of all the complex facets of individual instruction in extension education, it might be useful to construct a simple, theoretical basis before proceeding with the research design.
THEORETICAL FRAMEWORK

This chapter will develop a brief theoretical perspective which will serve as a rationale for preparation of the research design.

Communication Theory

A number of disciplines have found it useful to work with a basic communication model which they can modify to suit their own situations. Perhaps it is a fair assumption that most extension workers are familiar with and interested in communication theory.

Modern communication theory usually is based in large part on the basic ideas of Claude Shannon. He is credited with reducing the complex nature of communication into one coherent model.

Shannon (88) initially constructed his model to include a source, transmitter, channel, receiver, and other elements. (See Figure 1, page 381 in Shannon.) Shannon recognized that messages frequently have meaning, but he was primarily interested in the engineering problems of communication, not the semantic aspects.

Pierce states that the usefulness of Shannon's theory "...is based in the broadest sense on the fact that it reduces any communication style, however complex, into a few essential elements" (89). He states that Shannon's communication theory is also sometimes known as "information theory." Some observers evidently feel that Shannon's theory was essentially a signal theory rather than an information theory as it is understood today.

For our purposes, it is useful at this point to introduce a highly simplified form of Shannon's model.
Fig. 1. Simplified Communication Model

Much more elegant models are available illustrating two way communication, feedback and the like. Two-way communication has obvious merit in the instructional situation.

Wiener (90) studied the importance of communication in machines as well as in living organisms. He introduced the term cybernetics to describe "...the entire field of control and communication theory, whether in the machine or in the animal..." (p. 11). Wiener became convinced that the control aspect called feedback is an important factor in voluntary behavior.

Berlo (91) pointed out the relationship between the communication model and the learning model and formulated a "Source-Message-Channel-Receiver" (p. 73) version of the communication model. He also stressed the idea that communication theory reflects a process point of view. He states that "If we accept the concept of process, we view events and relationships as dynamic, on-going, ever-changing, continuous" (p. 24).

Phenomena which are not static can be said to occur within a system. All events within a system are intercorrelated. Bertalanffy (92) has developed the idea of system into a general theoretical orientation. He is convinced that the idea of system presents a superior tool for
understanding reality. The transmission of information occurs within a system.

Individual instruction can now be considered as a special process within a system. No instruction is possible without communication, but communication is a process. It is not an end in itself in extension education.

The Information Concept

Information is an intangible. Parker states "There are three basic elements that make up our new, largely man-made environment and, hence, determine the quality of life. The first is matter, the second is energy, and the third is information" (93). He makes the startling observation that the supply of matter and energy is finite on our planet, "But information, which is the pattern of organization of matter and energy, has a potentially infinite supply."

The study of information appears to have achieved the stature of a discipline and "As a discipline, information science seeks to create and structure a body of scientific, technological, and systems knowledge related to the transfer of information" (94a).

Duft (94b) suggests that the "explosion" of information is a strong argument for using a systems approach in Cooperative Extension programming.

In the instructional situation, information can be seen as analogous to what extensionists often call "content." Wiener has commented that "Information is a name for the content of what is exchanged with the outer world as we adjust to it, and make our
adjustment felt upon it.... To live effectively is to live with adequate information" (95, p. 26).

Pierce (96a) cautions that information is not the only thing that can be communicated. He says:

A modern philosopher, A. J. Ayer has commented on the wide meaning and importance of communication in our lives. We communicate, he observes, not only information, but also knowledge, error, opinions, ideas, experiences, wishes, orders, emotions, feelings, moods. Heat and motion can be communicated. So can strength and weakness and disease (p. 1).

Pierce suggests there are different meanings for the word information and seems to feel it should not be confused with the word "knowledge."

Information is lifeless, but can become knowledge when integrated into a human system. It is said that Socrates conceived of knowledge as the only good and ignorance as the only evil (96b).

Machlup (97) denies there is a difference between knowledge and information when both refer to what an individual knows or is informed about. He states "Again we conclude that all information in the ordinary sense of the word is knowledge, though not all knowledge may be called information" (97, p. 15).

Travers (98a) defines information as that which reduces uncertainty at the receiver end of the communications system, and knowledge as coded information.

Ultimately, questions relating to the source, methods and nature of human knowledge are referred to that branch of philosophy called epistemology or the "theory" of knowledge (98b).
At this point, instead of focusing on the message or what constitutes information, we can instead emphasize the outreach process or the dissemination factor related to achieving communication with an intended audience in extension.

![Information Model with Three Elements of Process](image)

**Fig. 2** Information Model with Three Elements of Process

It is convenient to abstract at least three elements of universal importance to the process of extension education as shown in Figure 2. Universities and other agencies are originators of new information. Extensionists assist in disseminating information to clientele who find it useful.

The efficient transfer of information is of interest to psychologists, sociologists and a number of applied fields such as journalism. Loomis has emphasized the importance of the communication process as a comprehensive or "Master Process" of a social system (99).

Agricultural extensionists often find useful theoretical material in the adoption and diffusion studies of rural sociology. Lionberger (100) has reviewed research studies on adoption and diffusion and discusses application of information dissemination to educational programs. In fact, "almost every organized group is concerned with educating or influencing somebody," he notes (p. ix).
Diffusion research has shown that various sources of information may tend to change in relative importance during the "stages" of adoption. Information-seeking behaviors have also been studied (101). Innovations in agriculture and other areas may be communicated to masses, groups and ultimately to individuals (102).

Coolie Verner (21) suggests caution in interpreting this sociological research, however, with respect to the educational reference:

Adoption studies have rarely made a distinction between method and technique; consequently, some involve comparisons between them while others may compare methods or techniques. Equally important has been the lack of distinction between the concepts of communication and adult education with the result that process of both are compared at will. Such studies must be interpreted with great care because such comparisons that intermingle levels and classes of items indiscriminately may not be a valid basis for generalization (p. 28).

Information theory is a mathematical theory. No doubt its future will remain intimately linked with statistical analysis. But its conceptual utility in extension appears to be clear representation and ease of manipulation. Elements can be viewed as various entities such as institutions, programs or persons. It is notable here that the final element, the destination, receiver or information user is often a human being.

It is as the Smiths say, "In fact, those theorists concerned with the broader aspects of communication in education and other areas of social interchange may pay their respects to Shannon's mathematical formulations without attempting to put them to any direct use" (103, p. 436).
Information and Extension

Knowles (104) mentions that in recent years "...new frontiers have been opened..." (p. 28) in such learning related fields as neurophysiology, mathematical modeling, information processing, cybernetics, etc.

The association of the learning process in adult education and information is further commented upon by Ely. He says that:

Since information is neither a static nor a destructive commodity, but is continuously in the process of growth and change, it has brought with it a need for change in the educational process. The emphasis has shifted to the individual and his need for continuing education. This fact has best been summarized by John Gardner as follows: 'If the ultimate goal of the educational system is to shift to the individual the burden of pursuing his own education, the individual is faced with the problem of how to obtain information, where to obtain information, and from whom to obtain information which will meet his specific needs' (105).

Ultimately, we are concerned with enhancing the appropriate information flow to the individual extension client. At times, extension workers are concerned with the psychological makeup of the individual client as a factor in the process. The information-processing approach to cognition is a recent theoretical trend in psychology (106). Affect and conation are also influenced by information.

Kidd comments on this development in relation to adult learning (107, p. 89):

The act of learning new material can be identified with the successful organization, acquisition, storage, and retrieval of information. Much of the content in manuals that offer advice to teachers is really about effective and systematic means by which such a communication system can be developed.
The information model has such strong appeal that perhaps extension workers should be reminded of the dangers of naive acceptance of the metaphor of the human brain as information processor. There are certain problems associated with this view and, as Chomsky suggests, "What is involved is not a matter of degree of complexity but rather a quality of complexity" (108, p. 4). Quite obviously, the human brain is something completely different from the machine or the mechanistic model.

A considerable portion of human learning (and especially the higher cognitive processes) appears to be related in some unknown way to the ability to symbolize and use language. Chomsky says it is necessary for science to isolate and study what he calls a system of linguistic "competence" which actually underlies behavior, but is not related to behavior in a simple way. "And this system of linguistic competence is qualitatively different from anything that can be described in terms of the taxonomic methods of structural linguistics, the concepts of S-R psychology, or the notions developed within the mathematical theory of communication or the theory of simple automata" (p. 4).

The fact that the information concept continues to have analytic utility in extension as an instructional concept is not to suggest that persons working in extension should interpret the information reference too narrowly. The transfer of information does not occur in simple, linear fashion as some models might suggest. Agents must look beyond the "mere" dissemination of information in their work.

Typically, agents are interested in areas of instructional processes much wider than information flow, per se, such as motivation, learning,
understanding, human development, etc. They must also consider social goals and human values. A report by a joint USDA-NASULGC study \cite{109} states it this way:

In its educational role, Cooperative Extension Service Interprets, disseminates, and encourages practical use of knowledge. It transmits information from researcher to the people. But it is also an agency for change — a catalyst for individual and group action (p. 17).

With this caveat, the information model can now be visualized as an extension education model.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{extension_education_model.png}
\caption{Extension Education Model}
\end{figure}

Information sources can be proprietary schools, government agencies, public libraries, informal leaders, etc. An institutional element is frequently appropriate as shown in Figure 3. In university extension, the institution itself may be viewed as an originator, organizer and repository of knowledge. It is a source of extension information.

The agent of information dissemination is shown in the second element. He may be a teacher, trainer, leader, change agent, extension director, counselor, worker, or instructor. He is concerned with the orderly dispersal of information, among other duties.
The third element is the receiving individual who assimilates the information into his own experience. He may be the learner, student, client, consumer, or information utilizer.

Institutional prerogative, instructor intent, and client perception or request may influence individual instruction. The model helps reduce confusion by depicting the client *qua* individual, instead of group member, classroom participant, audience member, etc.

From this theoretical framework we will now move to the research method.
METHOD OF RESEARCH

The organizing principle of the research design relates to the extension model shown in Figure 3 in the preceding chapter.

The research was conducted at three levels (national, state, international) and each level has reference to primary areas of interest which are specified elements of the model. On the national level, the primary area of interest is the first element, the institution or university. On the state level, the primary interest is the second element, the extension agent. On the international level, the interest is in all three elements of the extension process: institution, agent and client.

Relative emphasis of research is on general extension at the national level, agricultural extension at the state level and both general and agricultural extension at the international level.

Basic assumptions of the research method will now be stated, procedures outlined, and hypotheses generated.

Assumptions

The research method is predicated on several basic assumptions. These are presented at this point because of the complexity of the individual instruction concept and the variegated nature of extension education.

A. Individual instruction is a process whereby the teaching is specifically intended for and provided to one learner. Historical indications suggest a relationship between individual instruction and extension education.
B. A distinction can be made between direct, individual instruction and indirect, individual instruction. Direct is personal and face-to-face. Indirect is prerecorded or distance instruction. Further modal distinctions are possible but are not necessary for this research.

C. Extension education is a generic term which may include both university and non-university types. University Extension is an important form in the United States and includes both general and agricultural extension.

D. General university extension consists of higher adult education and continuing adult education as offered by universities. This may include on-campus instruction as well as educational activities off-campus. The Cooperative Extension Service (CES) is the most important type of agricultural university extension in this country.

E. Historical indications suggest an early association of indirect mode with general extension but the association of the direct mode is unclear. Direct instruction to individuals may be provided on a primary basis or an adjunct basis.

F. In other countries, the development of extension is not the same as outlined in the Background chapter above. Therefore, university extension is not necessarily a prominent form in foreign countries.

Procedures

The method of research contained specific procedures related to each level. "National" in this instance means the United States, "state" is taken to mean the State of Iowa and "international" refers to those foreign countries or overseas areas in which individual instruction in extension activity was detected. Table 1 illustrates the overall research design for the three levels.

Quantitative data in this study were processed by computer using the OMNITAB (110) language. Findings for each level of research are presented in the next chapter.
Table 1. Research design for the study of individual instruction in extension education.

<table>
<thead>
<tr>
<th>Level</th>
<th>Model Element</th>
<th>Extension Type</th>
<th>Instruction Mode</th>
<th>Investigation Method</th>
<th>Main Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATIONAL</td>
<td>Institution</td>
<td>General University</td>
<td>Direct Only</td>
<td>Mailed Survey</td>
<td>Detection</td>
</tr>
<tr>
<td>STATE</td>
<td>Agent</td>
<td>Agricultural University (CES)</td>
<td>Direct &amp; Indirect</td>
<td>Mailed Questionnaire</td>
<td>Opinion Analysis</td>
</tr>
<tr>
<td>INTERNATIONAL</td>
<td>Institution Agent</td>
<td>All Types</td>
<td>Direct &amp; Indirect</td>
<td>Bibliographic</td>
<td>Description</td>
</tr>
</tbody>
</table>
National

At this level, a survey was conducted of selected domestic (ill) universities believed to have an interest in general extension. An attempt was made to select institutions with the term "university" in the name of the institution but there are a few exceptions to this such as the Georgia Institute of Technology, the Oregon System of Higher Education, the New School of Social Research, etc. Some universities were not included because there was no indication of an interest in general extension, e.g., Yale, Stanford, Princeton and Cornell.

Whenever possible, the transmittal letter of the survey form was addressed to a specific individual who occupies the position of "Dean/Dir., Continuing Education... Dean/Dir., Evening Division... or Dean/Dir., Extension," etc., but in no case was a letter addressed to the Dean of Cooperative Extension (ill, p. 456).

The intention at this level was to collect and analyze data related to various dimensions of direct, individual instruction in general extension. Detection of the phenomenon was, in effect, the main objective, but other dimensions were explored such as instructor interest, client need and future use. The survey instrument is shown in Exhibit 1.

Prior to mailing the survey instrument, a pretest was conducted and nine pretests were returned out of ten requested. All pretest participants were practicing professionals in some aspect of general extension.
The survey instrument was sent on three consecutive mailings on November 7, November 24, and December 8, 1975. Transmittal letters for the mailings are shown in Exhibits 2A, 2B, and 2C. If a response was obtained, second or third mailings were not made. The 218 universities invited to participate are listed in Exhibit 3. Those who responded prior to the closing date of December 30, 1975, are shown in Exhibit 4.

The statistical analysis procedure of the instrument consisted of observed minus expected frequencies of responses to survey items. The Chi Square (112) was used as a test of significance of the null hypotheses. Frequency data obtained from the instrument were processed by computer (113) according to the following formula:

\[ X^2 \text{ d.f.} = \sum_{i=1}^{5} \frac{(O_i - E_i)^2}{E_i} \]

The survey form included one non-structured item.

State

At the state level, a questionnaire was administered to the County Extension Directors of the State of Iowa. The intention of the questionnaire was to collect and analyze data on various dimensions of expressed opinion about individual instruction. Opinion analysis was the main objective of this level. An attempt was made to find out if any significant opinion exists about individual instruction relative to five commonly recognized phases (114) of program development in Cooperative
A pretest was conducted and five pretest forms were returned out of five requested. All pretest participants were known to have field experience in Cooperative Extension at the county level.

The questionnaire instrument was sent in three mailings (unless response was obtained from the first or second) on November 4, November 24, and December 8, 1975. The instrument is shown in Exhibit 5. Transmittal letters are shown in Exhibits 6A, 6B, and 6C.

The statistical analysis procedure involved testing mean variation from the response of no opinion. The $z$ distribution (112) was used to test the significance of the null hypotheses. Quantitative data from the instrument were machine processed (113) using the formula:

$$z = \frac{\bar{x} - \mu}{s / \sqrt{n}}.$$

The questionnaire form also included one free response or "open-ended" question.

**International**

At the international level, library research (115) was conducted in an attempt to obtain descriptive, qualitative data related to individual instruction in comparative extension education. This level excluded the United States.

The primary intent of the investigation at this level was to search for library evidence of individual instruction in extension activities at foreign locations and provide brief descriptions of these activities.
This level of research was not limited to any specific element of the extension model and encompassed both direct and indirect modes of individual instruction.

The library research pertaining to this level was conducted at Iowa State University Library (116). The resources of this Library are now in excess of one million volumes. Iowa State University is a member institution of the Center for Research Libraries (117).

Mouly (118, p. 225) has referred to this method of research as "bibliographic research." References supporting this level of research are included in the Bibliography chapter of this report, items number 120 through 192.

Hypotheses

**National level**

The null hypotheses of the general case is that the difference in the proportion of responses in each available category of response will be zero. The alternative hypothesis of the general case is that the difference will not be zero. The following specific hypotheses were generated about the phenomenon of direct, individual instruction in general university extension:

N-1 The proportion of responses to primary form in categories high, moderate, low, very low, and none will be equal.

N-2 The proportion of responses to adjunct form in categories high, moderate, low, very low, and none will be equal.

N-3 The proportion of responses to total availability in categories high, moderate, low, very low, and none will be equal.
These hypotheses correspond to and were tested by items 1 through 9 of the National Survey Instrument, Exhibit 1. It was reasoned that any significant difference between observed and expected frequencies would yield information pertinent to the survey item, as well as provide data for the decision to accept or reject the null hypothesis.

State level

The null hypothesis of the general case is that the difference of the average score of responses from the value of no opinion will be zero. The alternative hypothesis of the general case is that the difference will not be zero. The following specific hypotheses were generated about agent opinion toward the phenomenon of individual instruction:
S-1 There will be no opinion expressed on items related to need assessment.

S-2 There will be no opinion expressed on items related to determining program objectives.

S-3 There will be no opinion expressed on items related to designing program strategy.

S-4 There will be no opinion expressed on items related to program implementation.

S-5 There will be no opinion expressed on items related to program evaluation.

Each hypothesis was tested by five grouped items on the State Questionnaire Instrument (Exhibit 5) as indicated —

S-1: 1, 6, 11, 16, 21
S-2: 2, 7, 12, 17, 22
S-3: 3, 8, 13, 18, 23
S-4: 4, 9, 14, 19, 24
S-5: 5, 10, 15, 20, 25.

In accordance with the principle of scientific parsimony, any one non-significant item in a group shall be sufficient to accept the null hypothesis. Reasons for suspecting no opinion or indifference are such contributing factors as improved transportation, more facilities for meetings, organizational pressure, social climate, familiarity, new techniques in group and community methods, and apparent lack of research interest in the individual method.

**International level**

No hypotheses were tested at this level of research; it is library-oriented research and not quantified.
FINDINGS

National

Response rate = 87.6%. Responses were received from 191 universities: 125 from the first mailing, 27 from the second, and 39 from the third. A total of 27 institutions did not respond before the closing date. A total of 184 forms were used in the statistical analysis; 7 forms were not completed.

Hypotheses N-1 through N-9 are all rejected. Tables 2 through 10 below are Chi Square analysis tables showing observed frequencies of response (O), expected frequencies (E), and Chi Square values for each hypothesis. Significance at the .001 level of confidence is indicated by three stars.

Table 2. Analysis of N-1, Primary Form.

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>24</td>
<td>36.8</td>
</tr>
<tr>
<td>Moderate</td>
<td>8</td>
<td>36.8</td>
</tr>
<tr>
<td>Low</td>
<td>28</td>
<td>36.8</td>
</tr>
<tr>
<td>Very Low</td>
<td>68</td>
<td>36.8</td>
</tr>
<tr>
<td>None</td>
<td>56</td>
<td>36.8</td>
</tr>
</tbody>
</table>
| Total  | 184| 184| 65.57***
### Table 3. Analysis of N-2, Adjunct Form.

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>3</td>
<td>36.6</td>
</tr>
<tr>
<td>Moderate</td>
<td>30</td>
<td>36.6</td>
</tr>
<tr>
<td>Low</td>
<td>53</td>
<td>36.6</td>
</tr>
<tr>
<td>Very Low</td>
<td>68</td>
<td>36.6</td>
</tr>
<tr>
<td>None</td>
<td>29</td>
<td>36.6</td>
</tr>
</tbody>
</table>
| Total | 183| 183| 67.9***

### Table 4. Analysis of N-3, Total Availability.

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>19</td>
<td>36.6</td>
</tr>
<tr>
<td>Moderate</td>
<td>22</td>
<td>36.6</td>
</tr>
<tr>
<td>Low</td>
<td>47</td>
<td>36.6</td>
</tr>
<tr>
<td>Very Low</td>
<td>76</td>
<td>36.6</td>
</tr>
<tr>
<td>None</td>
<td>19</td>
<td>36.6</td>
</tr>
</tbody>
</table>
| Total | 183| 183| 68.12***
### Table 5. Analysis of N-4, Course Offerings.

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most</td>
<td>18</td>
<td>36.4</td>
</tr>
<tr>
<td>Half</td>
<td>12</td>
<td>36.4</td>
</tr>
<tr>
<td>Several</td>
<td>36</td>
<td>36.4</td>
</tr>
<tr>
<td>Very Few</td>
<td>80</td>
<td>36.4</td>
</tr>
<tr>
<td>None</td>
<td>36</td>
<td>36.4</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>182</td>
</tr>
</tbody>
</table>

Total 77.89***

### Table 6. Analysis of N-5, Subject Areas.

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most</td>
<td>17</td>
<td>36.4</td>
</tr>
<tr>
<td>Half</td>
<td>15</td>
<td>36.4</td>
</tr>
<tr>
<td>Several</td>
<td>32</td>
<td>36.4</td>
</tr>
<tr>
<td>Very Few</td>
<td>86</td>
<td>36.4</td>
</tr>
<tr>
<td>None</td>
<td>32</td>
<td>36.4</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>182</td>
</tr>
</tbody>
</table>

Total 91.57***
Table 7. Analysis of N-6, Self-directed Learner.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>7</td>
<td>35.4</td>
</tr>
<tr>
<td>Moderate</td>
<td>50</td>
<td>35.4</td>
</tr>
<tr>
<td>Low</td>
<td>40</td>
<td>35.4</td>
</tr>
<tr>
<td>Very Low</td>
<td>57</td>
<td>35.4</td>
</tr>
<tr>
<td>None</td>
<td>23</td>
<td>35.4</td>
</tr>
</tbody>
</table>
| Total | 177 | 177 | 46.93***

Table 8. Analysis of N-7, Student Need.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>22</td>
<td>34.4</td>
</tr>
<tr>
<td>Moderate</td>
<td>68</td>
<td>34.4</td>
</tr>
<tr>
<td>Low</td>
<td>42</td>
<td>34.4</td>
</tr>
<tr>
<td>Very Low</td>
<td>35</td>
<td>34.4</td>
</tr>
<tr>
<td>None</td>
<td>5</td>
<td>34.4</td>
</tr>
</tbody>
</table>
| Total | 172 | 172 | 64.1***
Table 9. Analysis of N-8, Instructor Interest.

<table>
<thead>
<tr>
<th>Interest Level</th>
<th>Observed (O)</th>
<th>Expected (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>20</td>
<td>33.2</td>
</tr>
<tr>
<td>Moderate</td>
<td>44</td>
<td>33.2</td>
</tr>
<tr>
<td>Low</td>
<td>45</td>
<td>33.2</td>
</tr>
<tr>
<td>Very Low</td>
<td>48</td>
<td>33.2</td>
</tr>
<tr>
<td>None</td>
<td>9</td>
<td>33.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>166</strong></td>
<td><strong>166</strong></td>
</tr>
</tbody>
</table>

Table 10. Analysis of N-9, Future Use.

<table>
<thead>
<tr>
<th>Future Use</th>
<th>Observed (O)</th>
<th>Expected (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considerably More</td>
<td>16</td>
<td>35.6</td>
</tr>
<tr>
<td>More</td>
<td>61</td>
<td>35.6</td>
</tr>
<tr>
<td>Same</td>
<td>87</td>
<td>35.6</td>
</tr>
<tr>
<td>Less</td>
<td>2</td>
<td>35.6</td>
</tr>
<tr>
<td>None</td>
<td>12</td>
<td>35.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>178</strong></td>
<td><strong>178</strong></td>
</tr>
</tbody>
</table>
The percentage of responses obtained in each category for the nine items are given below, rounded to one decimal.

1. Extent of offering direct mode as a primary form: High 13%, Moderate 4.4%, Low 15.2%, Very Low 37%, None 30.4%.

2. Extent of offering direct mode as adjunct form: High 1.6%, Moderate 16.4%, Low 29%, Very Low 37.1%, None 15.9%.

3. Estimate of total availability of direct mode: High 10.4%, Moderate 12%, Low 25.7%, Very Low 41.5%, None 10.4%.

4. Extent of availability relative to course offerings: In Most 9.9%, In Half 6.5%, In Several 19.8%, Very Few 44%, None 19.8%.

5. Extent of availability relative to subject areas: In Most 9.3%, In Half 8.2%, In Several 17.6%, Very Few 47.3%, None 17.6%.

6. Amount of effort made to assist self-directed learner: High 3.9%, Moderate 28.3%, Low 22.6%, Very Low 32.2%, None 13%.

7. Characterization of student need for direct mode: High 12.8%, Moderate 39.5%, Low 24.4%, Very Low 20.4%, None 2.9%.

8. Estimation of instructor interest in providing direct mode: High 12.1%, Moderate 26.5%, Low 27.1%, Very Low 28.9%, None 5.4%.

9. Anticipation of future use of direct mode: Considerably More 9%, More 34.3%, Same 48.9%, Less 1.1%, None 6.7%.

These findings indicate that the use of the direct mode of individual instruction is very low to none as a primary form and very low to low as an adjunct form. The total availability is very low with very few course offerings in very few subject areas. Attention to the self-directed learner is very low to moderate and low. Student need for this mode was assessed as moderate to low and very low. Instructor interest was
reported as very low to low or moderate. Most institutions anticipate no change in the future use of this mode, with the next largest category expecting more use.

The number of institutions providing substantive responses to Item 10 of the survey instrument = 81. The number of institutions providing specific examples of direct, individual instruction = 42. The total number of specific examples of the use of direct, individual instructions at institutions = 51, because some universities listed more than one example.

State

Response rate = 100%. Following the mailing of the first letter, 95 responses were received; 2 following the second letter and 3 following the last letter. A total of 99 forms were used in statistical analysis; one respondent stated he had insufficient field experience to participate at this time.

The following calculated z values were obtained for the items as shown. Significance at the .05, .01, and .001 confidence levels are indicated by one, two or three stars, respectively.

1. \(-2.640^{**}\) People in my county generally prefer group instruction instead of individual instruction. (Disagree.)

2. \(3.257^{**}\) I give consideration to individual instruction when setting program objectives. (Agree.)

3. \(2.609^{**}\) I give specific attention to individual instruction when designing program strategy for my county. (Agree.)
4. **3.143** Farm and home visits remain an important program implementation procedure in my county. (Agree.)

5. -1.782 I find it difficult to evaluate the impact of individual instruction. (No opinion.)

6. **3.548** Extension should provide personal counseling for individual clients who need it. (Agree.)

7. **-11.627** As the number of independent farmers decreases, individual instruction becomes less important as a means of meeting program objectives. (Disagree.)

8. **3.570** Individual instruction is as appropriate for program strategy in modern settings as it was in past years. (Agree.)

9. 1.979 Individual instruction is a primary educational method of implementing the Cooperative Extension program. (Agree.)

10. **-2.891** My time is spent more effectively when writing a news article than when conducting individual instruction. (Disagree.)

11. **3.961** Extension education is an area which has a continuous need for individual instruction. (Agree.)

12. **2.827** In meeting program objectives, Extension philosophy appears to place emphasis on teaching methods other than individual instruction. (Agree.)

13. **3.993** Individual instruction is an appropriate strategy for reaching disadvantaged persons. (Agree.)

14. 0.063 I spend less time implementing the Extension program through individual instruction than I do on mass instruction. (No opinion.)

15. -0.792 My time is used more effectively at meetings than in providing individual instruction. (No opinion.)

16. **-5.930** Urban Extension has less need for individual instruction than rural Extension. (Disagree.)

17. **3.796** Individual instruction definitely should be considered when formulating program objectives. (Agree.)
Hypotheses S-1, S-2, and S-3 are rejected. Hypotheses S-4 and S-5 are supported.

As measured by this instrument, results tend to indicate that significant opinion does exist among County Extension Directors in Iowa relative to those items associated with need, objectives and strategy — but not necessarily relative to those items associated with program implementation and evaluation. Extension Directors appear not to be indifferent to the individual method. The high response rate and relatively large number of responses to the open ended question seem to corroborate this view. A total of 91 responses in substance were received for Item 26.
International

This section was compiled using library facilities and contains brief descriptive material believed to appertain to the phenomenon of individual instruction and individualized forms in comparative extension. It is not limited to any one element of the conceptual model. It is
intended as an inquiry into the international perspective and not an exhaustive compilation.

Research findings for this level are reported in two categories: general and agricultural. This is a loose grouping and categories are not necessarily mutually exclusive. In foreign countries, university extension is not necessarily the prevalent or most visible form of extension education. The category "general" below is used in contrast to agricultural extension and should not be confused with general university extension as it has developed in the United States.

Agricultural extension is not restricted to farming activity, but is taken to include education activities related to rural life in general. Perhaps not all researchers would agree with this classification. For example, Freire has undertaken a "semantic analysis" of the term extension (119, p. 93) and seems to prefer the term rural extension as the more inclusive term rather than agricultural extension.

In an attempt to reflect contemporary material, no references were selected which are dated prior to 1960.

General

Material under this category will be reported under correspondence study, extramural study, tutoring and instructional technology. These classifications are apparent and not intended as definitional.

Correspondence study Evidence of the use of this form of indirect, individual instruction exists in various overseas locations.

In Indonesia, Huq (120) reports the use of correspondence courses in teacher training. He notes that the system of teacher education has
been undergoing change and development in Indonesia. Because of an acute shortage of teachers, schemes were developed to provide outreach instruction to the teacher as client. A special Board of Teacher Training was established in Bandung. One of the schemes involved training teachers primarily through "weekly lessons by correspondence." (p. 190).

Price (121) indicates that correspondence education was not unknown in China prior to 1949, but it was not until that year that official support was obtained and correspondence study developed into "a serious alternative way of getting qualified" (p. 200). He states that the People's University in Peking offered courses after 1963 ranging from logic to factory management and from six months to five years in duration. The author classifies correspondence study as "spare-time" education for the Chinese.

Pennar, Bakalo and Bereday (122) have traced the development of correspondence study in Russia and conclude that "The training of specialists in the correspondence or evening sessions is of great importance to the Soviet educational system" (p. 62). Clients are usually adult workers but the authors indicate that correspondence training at the higher education level in the USSR is often unrelated to the worker's actual job.

Irmak (123) believes that correspondence study can be introduced to all levels of education in Turkey even though this type of instruction is still relatively new to that country. The first institution for correspondence study in Turkey began to operate in 1961 on an official
basis. However, "Correspondence Education sent its first letters, in a course designed to train qualified electricians, to students on January 4, 1960." Turkey received technical assistance from the Centre National d' Enseignement par Correspondance en Paris.

Kabweza and Kaunda (124) have assembled material on the subject of correspondence instruction in Africa. Material is included on professional and administrative training, social planning, public administration and a number of other areas relating to post-secondary correspondence education. A number of contributors cover various facets of correspondence study in Africa including the introduction and use of correspondence courses. Useful case studies are also provided. A "Survey of African Correspondence Institutions" (p. 107) provides information on aims, subjects, students, staff, and other aspects of African Correspondence Institutions in a number of African countries.

Mikrut (125) observes that adult education programs in Ethiopia have attempted to implement some form of correspondence study at various times in recent years. However, he states that nearly all of these efforts have failed either because the program was aimed at a specific clientele and was terminated when the training was completed, or because the magnitude of the illiteracy rate in Ethiopia is "overbearing."

Makulu (126, p. 80) states that correspondence courses have become important in developing countries in Africa at the secondary stage of adult education. Educational facilities have often lagged far behind the demands for secondary education and thus "...the correspondence
college has assumed far greater significance than in some other parts of the world."

Townsend-Coles (127) expresses the view that correspondence teaching has been introduced in many countries under what he calls a cloud of suspicion. He states that this is unfortunate because it is the main alternative method to direct teaching. "It has been described as the worst of all techniques of education. In the developing countries to argue about its merits and demerits is wasted effort" (p. 96). Townsend-Coles insists that students need incentives and financial reward is the most effective. He states that in Malawi a student is permitted to sit for an examination at a reduced fee if he has completed all of the exercises in a course.

Holmberg (128) suggests that individual diagnosis is an integral part of the correspondence instruction. He traces the development of correspondence instruction in Sweden and mentions that an institution called Hermods was the first correspondence school in that country. Hermods was founded in 1898. The teaching staff at Hermods places considerable emphasis on the diagnostic test because "In the interest of effectiveness, it is essential that both the correspondence school and the student himself realize what the student's standard is and where his difficulties lie."

The University of Liverpool organized a course in the United Kingdom for the purpose of reviewing research undertaken in European countries on the topic of adult education. The course took note of correspondence study in European adult education (129). Professor Wedell of the UK
described a study of correspondence instruction by Mr. R. Glatter of the University of Manchester. He reported that 20,000 questionnaires were distributed to students enrolled in various correspondence colleges. One of the conclusions of the study was that "correspondence study is a preferred method and not merely a substitute because of distance from classes, etc." (p. 11).

Glatter and Wedell (130) state that this was the first large-scale British research on any aspect of correspondence study and consequently, "...our primary focus must be on the students who take correspondence courses" (p. 57). The authors acknowledge that a high proportion of the correspondence course clients discontinue their study before reaching the examination stage. Although the evidence is limited and very subjective, they suggest that the main reason for high dropout might not be related to the individual method of the correspondence technique, but instead from problems associated with the part-time nature of such study.

In British further education, Cantor and Roberts (131) refer to the "substantial numbers of students" who are studying for professional commercial qualifications in business and management "by correspondence courses only" (p. 111). Still, they note that "...the numbers of students taking qualifications by means of correspondence courses outside further education is slowly declining." Moreover, they feel that "As the wastage rate among students attempting to obtain qualifications by correspondence courses is inevitably high, this is a trend which is greatly to be welcomed" (p. 112).
Peters (132) reports that local education authorities in England provide individual instruction to the disabled and handicapped through correspondence courses. They also provide individual facilities to patients in hospitals such as lessons conducted by visiting teachers and the loan of books and instruction materials. But Peters states that "the total provision of such facilities, however, is very small" (p. 216).

Rebel (133) describes the work of the German Institute for Home Study at the University of Tubingen. He argues for the establishment of an infrastructure for out-of-school education which would include spacious, well equipped centers of learning to serve the individual adult learner. Rebel comments on the "existentially felt needs" of the individual adult in highly industrialized societies including the ever changing demands of the professions. He concludes that "In reality, the changes in the life cycle of an adult are much larger than they are between the ages of ten and twenty. Because of this, learning takes on real meaning for the existence of every adult." Rebel believes that the adult must be free to learn at his own tempo and thinks that home study can fulfill the demands of the adult at present better than conventional teaching methods can.

MacKenzie, Ossian and Christensen (134) have compiled material on the international aspect of correspondence instruction. Included are discussions of the status and trends of correspondence study in Australia, Canada, Denmark, German Democratic Republic, England, Finland, Japan, Malaysia, The Netherlands, Norway, Russia, and Sweden, and other areas.
Erdos (135) has conducted a study of correspondence study for UNESCO. She discusses combining correspondence teaching with oral teaching of individual students. She notes that informal oral teaching during interviews or student visits to a correspondence school can supplement the regular correspondence study. She states that "The supplementary oral teaching of the individual is systematically organized by some correspondence schools which employ itinerant teachers or field officers who travel on circuit periodically visiting the homes of correspondence students" (p. 79). Erdos discusses specific lesson examples and also the application of correspondence instruction in a number of countries.

Other material is, of course, available on the use of correspondence instruction for the individual student in other countries. The preceding material is intended to illustrate the use of correspondence instruction at the international level. As Wedemeyer (136) has noted, correspondence education appears to be one of the "persistent forms" of university extension. It is also in use at other educational levels.

Extramural study In some overseas locations, the individual student might have access to education external to the university. Pereira (137) discusses an experiment in external studies at the University Palau Pinang, Malaysia. This is an off-campus academic program leading to degree awards. It is intended primarily for adult students above the age of twenty-three years, according to Pereira, who are working in the home or who are employed on a full-time basis. Pereira states that the courses are offered at three levels of academic
study and that "The program functions to balance the inequalities of opportunity that exist between working men and full-time university undergraduates."

The external student may work individually and at times might use the correspondence course to study for a degree. Carr-Saunders (138) mentions that in Australia two universities conduct correspondence courses for degrees on a large scale: The University of Queensland and the University of New England. He notes that at the latter university the system is organized most carefully and "...the work is carried out by regular members of the staff and not by people specially appointed for the purpose, and this is a most valuable feature of the system" (p. 224).

Sheath (139) asserts that in his experience at the University of New England the "home-based" student is more mature and more highly motivated than the average resident student. The external student is also much more demanding of his teachers and a closer relationship can develop between instructor and client. "In my own university it is often said, although it may be hard to believe, that many of our external students living hundreds of miles from the university campus are better known to their lecturers than some of the resident students," states Sheath.

The external student may write to his instructor for advice or further comment on written work whenever he likes, Sheath reports. Sheath also comments that London University has offered external degrees for many years and that the vast majority of the individual students do not receive teaching from the University. Evidently, this is an instance wherein the instruction itself is not extended but evaluation and
certification are. Sheath says of these clients that "They simply pay fees, obtain lists of books and curriculum details, and sit for examinations. They may and can rely on assistance from coaching colleges or they may struggle under their own resources."

Dongerkery (140) explains that in India, the idea of extramural study and university extension is comparatively new to the universities, although some of them are moving in that direction in recent years. The University of Delhi began a program of correspondence courses in 1962 for the B.A. pass course, but generally Indian universities have been lukewarm about starting correspondence programs. Dongerkery further states that some universities have a third category of students who are not full-time or part-time and are not provided with any kind of instruction, even by correspondence course. "These are designated as 'private' students, who study by themselves without any guidance from the universities, and the only privilege extended to them by the universities is the permission to appear for their examinations" (140, p. 305).

Buttedahl (141) describes the development of adult education at the University of Rajasthan with the cooperation of the University of British Columbia and the Canadian International Development Agency. This included the development of a correspondence program taught in Hindi. Buttedahl asserts that one of the appropriate responsibilities of the University is to organize training programs for supervisors and administrators in literacy training. This is a huge task in India and could presumably include some training on an individual basis. Buttedahl mentions specifically that "another function is that of consultation and advice
in the planning of literacy programs and in the preparation of materials, bringing to bear upon the literacy program all the expertise of the University" (p. 29).

In the German Democratic Republic, the University of Leipzig offers extramural study in economics, technology, and agriculture (142). Mohle reports that printed instructions are provided to the student to show how to work through the textbook. Instruction will gradually be decreased, however and "...effective individual study will be required of the students." External students have access to modern audiovisual equipment in the new university complex and individual private study is augmented by regular consultation. Mohle says of the students that "They will also meet their consultant teachers in the towering main building, called the "Wisdom tooth" by the people of Leipzig" (142).

Fordham (143) outlines the exportation of extramural study from England to Africa and mentions specifically the creation of "resident tutor" posts to serve areas remote from the university in parts of Africa as a borrowed component of the English tradition. Although heavily group oriented, this tradition included "...regular reading, and the scholarly development of student thought and expression in writing."

Following the Nigerian civil war, the Division of Extra-Mural Studies of the University of Nigeria attempted to use outreach education to arrest anomia in the devastated areas of the Eastern Region. According to Odokara (144), the University played a role in providing continuing education in community affairs, women's education, clubs for young farmers and other areas. Instruction was aimed directly at anomic
clients whose psychological state bordered on "...uncertainty, hopelessness, and abject despair." Odokara also describes an apprenticeship training program for school drop-outs. "The drop-outs were identified, tested, motivated and with the joint effort of the Ministry and industry, successful participants were placed on job." Odokara states that "...the program was individualized and lasted for nine months." Emphasis was placed on individual, group, and community education as a "holistic complex" and Odokara warns that "Community problems cannot be solved by an educational system oriented to the growth and development of the individual alone, in a cloister isolated from community context" (p. 5).

Extension in Ethiopia has been examined by Wedemeyer, Goodman, and Balbir (145). They conclude (p. 47) that "The age-old barriers to learning that were implied in the Platonic model (congruency of space and time; i.e., a learner had to occupy the same space at the same time as his teacher) are an anachronism today, even in Ethiopia." They challenge the ancient assumption "...that learning is an event of social interaction," and insist that teaching and learning must be viewed as separate acts by separate individuals. For learning to take place, it is irrelevant whether the teacher and learner are "eyeball to eyeball, earpan to earpan." They indicate that the individual format can be combined with other formats such as class, discussion, seminar, laboratory work, internships, field work, etc. They especially note the potential of correspondence study used in combination with other technology and media in the use of the individual format. Ethiopian extension needs instructional systems which are capable of freeing the individual
learner (as well as the teacher) from the space/time tyranny inherent in the Platonic model, according to these analysts.

External study for the individual student is available in a comparatively highly developed form from the University of South Africa at Pretoria. This institution was "Founded: 1873" (146, p. 2739) as the University of the Cape of Good Hope. It provides education for external degrees in the faculties of Arts, Commerce & Administration, Divinity, Education, Law, and Science. The institution now has 36 departments and two institutes.

Houle (147) has studied the external degree and notes that although it is a relatively new phenomenon in the United States, this is not the case in other countries. Houle mentions the influence that the University of London had on the counties of the British Empire in the development of external degree education. London influenced the development of the University of South Africa where the primary mode of instruction is the written word: "Students may form discussion groups, they may write letters to or call upon their instructors, and during summer vacation they may attend special schools. Essentially, however, teaching is by correspondence, and learning is undertaken independently" (147, p. 40).

The University of London makes many of its degrees and other awards obtainable to both internal and external students. Instruction per se is not extended to the latter category, but counseling, examination and certification apparently are. The course of study of the external student is undertaken outside the University and the University does not "...provide courses of study for external students. It undertakes only
to examine them and to provide advice through the advisory service for external students..." (148, p. 448).

In the case of the University of South Africa, that institution is concerned only with external students. Since 1951, there is no provision for attendance except at special summer sessions. Tuition is provided to the individual student in all undergraduate subjects except biology, botany, geology, hygiene, microbiology, and zoology: "Students must arrange themselves for a tutor..." and suitable laboratory facilities in these subjects (148, p. 1901).

Other British Commonwealth Universities have Extra Mural Departments or Extension Services. For example, the University of the South Pacific located near Suba, Fiji, has a School of Education which has the task of producing teachers for secondary schools in the South Pacific region and also for extending the university's "...work and presence throughout the region by a variety of extension services" (148, p. 1787). The "Dip Ed by correspondence" (p. 1788) is available through adult education extension courses. Likewise, at the University of Sri Lanka, "Students who have satisfied the admission requirements... of the university may register as external students in all subjects except science if they are unable to attend classes" (148, p. 1804).

Tutoring. The use of direct, individual instruction or tutoring is also commented upon at some overseas locations. Seybolt (149, p. 166) cites a description of "The Work Methods and Experience of the Mobile Tutorial Teams of Kwangtung Normal College" in China as reported in Red Flag. The College sent out 31 mobile tutorial teams in 1969 to 40 hsien.
The teams penetrated deep into the rural areas and mountainous regions. Clients evidently were usually the secondary and primary school teachers, but students also included "demobilized armymen and educated youths."

"The teams, in coordination with their investigations of the educational revolution, also go deep into schools to provide them with individual instruction. Teams operating on Hainan Island and in the mountain areas in northern Kwangtung have to climb mountains or wade through rivers to go to the villages inhabited by the people of Li and Yao nationalities in order to teach the people there on the spot" (149, p. 172). According to the report, the teams assist their clients in various ways, but especially in the training of teachers. Reportedly, "They are praised by the masses."

In France, there currently appears to be some type of tutoring or direct, individual instruction available from the Peuple et Culture (PEC) which is a private educational association founded after the Liberation. Presumably, the activities of the PEC are a type of non-university extension and membership is open to everyone. Titmus (150) asserts that the PEC has made considerable impact and part of its high reputation is due to its method of mental training or Entrainement Mental. It would appear that this mental training includes provisions for teaching the client a method for self-directed learning and self-development. Titmus describes this as consisting of three essential elements, observation of facts, developing personal judgement and rules which apply to the problem under study, and finally, application or action -- both intellectual and practical. This form of mental training is "...held to be universally
valid, to any problem, professional or recreational, emotional or intellectual" (p. 172). Titmus states that the training is so successful because it is so highly adapted to the needs of French adult education:

It provides a basic mental discipline, which, once mastered, can be passed on by a non-specialist tutor. It is valuable for itself and also because it offers a method by which any subject may be taught by a non-specialist -- if the tutor has the necessary teaching aids, particularly in the form of documentation (150, p. 173).

Bratchell (151) provides a reminder that in England the term "tutorial" does not necessarily refer to private tutoring. It would seem that the term is more at individualized instruction rather than the strictly individual method. Bratchell defines the tutorial as a "...teaching method in which small groups of students (no more than four) meet periodically with a tutor to discuss problems or present papers or essays; used extensively in universities, now being adopted in further education, particularly for advanced work" (p. 149).

Legge (152) offers a discussion of the relative strengths and weaknesses of individual instruction and observes that personal attachments for the purpose of individual training are utilized in many professions in England, including medicine. He concludes:

Private tuition has often been regarded as an ideal method of learning, and it is clear that it has many advantages. By its nature it requires a two-way contact with good student participation and it is virtually impossible for the student to be completely inactive without terminating the process altogether... The direct contact has the most important advantage that it provides the teacher with an immediate feedback and enables him to come to a close understanding of particular difficulties. Through it he can give help and encouragement at the point where they are most needed (p. 71).
However, Legge also cautions that "As a method it is very time-consuming and the intensity of the contact can be exhausting to both the people concerned" (p. 72).

The Belbins (153) have recognized the importance of individual differences in describing a governmental retraining project in England. They have expressed an interest in the problem of anxiety in older learners who are the recipients of training extended to the industrial situation. They discuss the importance of the instructor-trainee relationship and report that in some cases the instructor seemed to become a father figure in many senses: "Some of the course members had visited his home before applying for work with British Timken, others went there for additional coaching in calculations after work" (p. 29).

The authors examine "industrial tutorials" (p. 73) as a special approach for the older learner. In a retraining situation in the industrial setting, use was made of programmed instruction books: "They were of the linear type and allowed individual course members to proceed at their own pace" (p. 30).

Townsend-Coles (127) acknowledges the importance of reading for all adult students. The availability of books is crucial both for formal and informal situations. He proposes the idea of librarian-tutors and discusses the benefits of cooperation of university libraries and adult education departments. Townsend-Coles appears especially interested in promoting adult education tutors in the developing nations. He mentions specifically the need for "Individual tutorial assistance for students studying at a level where there are few others working in the same subject"
or who live in remote places" (127, p. 93). However, he concedes that providing direct, individual instruction for the client can be expensive.

Again in England, the Open University which was founded in 1969, combines mass, group and individual modes. Of interest here is the "Counselling and Tutorial Services" (148, p. 614) which are supplemental to correspondence, radio, television and residential summer schools:

Each student is allocated to a counsellor, based on one of the univ.'s regional study centres... who advises the student on gen. study problems. In addn. each student submits periodical assignments of written work to a tutor who corrects the work, comments upon it, and helps the student with academic problems and difficulties.

Instructional technology Tunstall (154) describes the Open University as "drastically different" from other universities in Britain. The Open University (OU) is widely known for the utilization of instructional technology. It would appear that OU combines correspondence instruction with mass forms through the use of instructional technology. Direct, individual instruction is available through counseling and staff tutoring, but the University essentially combines the multi-media approach with the correspondence form. The correspondence text appears to be the central feature of OU teaching methodology. Despite heavy reliance on television, radio and other technological innovations, these are nevertheless viewed as augmentative to correspondence instruction by Tunstall. He insists the OU is basically a correspondence institution. Of the clients, he states: "The students are 'independent learners' working largely in their own homes. They receive teaching materials, and return their work, by post" (154, p. vii).
Kinyanjui (155) also reports on the use of technology in combination with correspondence study — in this case radio instruction. The U. S. Agency for International Development provided technical assistance for a project combining radio with correspondence study by the Institute of Adult Studies at the University of Nairobi. Most clients were school teachers in Kenya, but clerks, farmers, housewives, members of the armed forces, police, and others also participated. Courses are offered in a variety of subjects and the full instructional program consists of a synthesis of correspondence study supplemented by the radio broadcasts, marking of the lessons of the students and "occasional face-to-face teaching."

In England, the National Extension College at Cambridge specializes in correspondence courses supplemented by television, according to Allsop (156). The International Extension College is also located in Cambridge and is described in a report by Perraton, Dodds and Young (157). The authors say that the idea of an international college grew from the work of the National Extension College which had been doing "three-way teaching" in England since 1963. The International Extension College was founded in 1971 with the purpose of providing services, advice and information on the topic of distance teaching for developing countries. Integrated extension projects consisting of correspondence lessons, broadcasting and face-to-face teaching are established by invitation from developing countries. Major projects include establishment of the Mauritius College of the Air, and organization of the Botswana Extension College. The authors also refer to projects in Lesotho, Nigeria, other
African countries, and Bangladesh.

A teaching machine called the "Unitutor" (158) has been developed at the Prague School of Economics and has been used successfully in teaching extra-mural students. "The Unitutor is a universal, adaptive teaching machine of Czechoslovak make." It contains features such as memory storage, projection screen, ten buttons for multiple choice responses, a keyboard with forty-six keys, etc. Teaching programs of various types are available for the Unitutor such as examination diagnostic, information, entertainment, etc. Clients are primarily students in industrial economics and business management. Reportedly, a number of benefits accrue to the external student through the use of Unitutor, including the fact that "The addressee works without compulsion, on his own, only with a machine, so that he does not have to fear that he might appear ridiculous to somebody."

Holmberg (159) indicates new uses of instructional technology at Hermods in Sweden "...among other things, the use of telecommunications and individual study supervision, including reminders to study, with the aid of computers." Written tutorial advice can be provided by computer. Holmberg also mentions other ways to enhance the traditional correspondence course by instructional technology, such as tape recordings, telephone, etc. Baath also comments on the somewhat elaborate system of diagnosis, and continuous feedback using optical scanners and automatic typewriters at Hermods (160). He doubts that this new system will mean more impersonal instruction:
The fact that by no means all the students realized that the comments were produced in advance and typed on an automatic typewriter has perhaps contributed to the thoroughly positive attitude to the typed comments. Among other things, a number of spontaneous letters from students to their "tutor" suggests this.

Evidently, some clients perceive that they are receiving individual instruction.

Instructional media in adult education appears to be in widespread use in Japan (161). The Ministry of Education in Japan has exhibited interest in various forms of short-wave and television technology to augment correspondence instruction. Adult educators in Japan evidently believe that superior instructional information should be made available to people in society not only in large groups, but also in small groups and on an individual basis. Although certain instructional functions can be expanded by technology and the ability of human beings can partially be expanded by the use of machinery and equipment, this word of advice also comes from Japan:

There are thus various types of equipment and devices which help to expand the diverse functions of instructors. At the moment, however, there are also some functions which cannot be improved by special equipment. These functions are related to the presentation of human feelings such as the warm consideration, expressions, gestures, etc., of instructors. In the case of man-to-man instruction, these functions often play important roles as vital bonds linking the instructor to the learner (161, p. 7).

Agricultural

Commentary and writings on individual instruction in agricultural extension at the international level were researched in this section.
Findings are reported thematically in the categories of agricultural development, reports and articles, and training materials. This grouping is only to facilitate reporting and is not intended to impose artificial definition or meaning on the material.

Agricultural development  Axinn and Thorat (162) have completed a comparative study of agricultural extension education systems in the rural social systems of the world. The authors make specific mention of individual instruction in some of these systems as a teaching method. However, the point is made that direct, individual instruction is not always feasible as a method. For example, "Although there is one adviser in Denmark for every 325 farms, the advisers cannot have personal contact with every farmer in their areas. Therefore, other communication channels are used extensively." Individual instruction would appear to occupy a place as one method in the system. However, here the authors postulate that "The success of a first line agricultural extension worker tends to be directly related to the extent of multiple use of communication" (162, p. 189). Rural extension in several other countries is also analyzed by Axinn and Thorat.

Stakman, Bradfield, and Mangelsdorf (163) refer to the establishment of an Agricultural Information Service in the extension service in Mexico. Here the workers utilized the individual interview technique. The helping interview can be used as a teaching technique but in this case it may have been more to obtain information about interests of the farmer and his background rather than simply dispensing information. The Mexican program evidently used mass and group methods to stimulate
individual instruction. Mobile movie projection units and other means were used for group and mass information dissemination about new farming practices and "Impressions thus accumulate and stimulate farmers to discuss their problems with the extension agent, who often can convince them that they should try the new methods" (163, p. 204).

Watts (164) describes "on-the-spot" training of people in Africa for vocational farming (p. 5). The individual rural woman is apparently also selected as client in some African programs. Watts has compiled reports on individual advisement in African extension situations. Among the types of projects reviewed are extension by secondary schools (here the school girls seem to function as "agents" to the farm women) extension by churches, extension by institutional farms, and by health centers. Makere University College and the Church of Uganda jointly sponsored an outreach education program in health education using rural health centers as bases. Work was concentrated on preventative measures such as immunization and nutrition teaching often in groups but apparently also to individual women. Teachers in medical extension evidently obtained such good results in arresting Kwashiorkor in some cases as to cast suspicion or arouse skepticism: "The protein malnutrition disease Kwashiorkor had such a dramatic cure that it was difficult to convince people that it was solely due to feeding."

More recently, Watts (165) comments on an apprenticeship type of format resulting in a student-agent arrangement:

Tanzania's colleges for extension workers have a unique system of practical training. Every student goes out once a week to a neighboring farmer and
cultivates a demonstration plot.... The student maintains his plot throughout the growing season and at the end compares his yield with that of the farmer. Student yields have often been double those of farmers.

Fowler (166) describes a farm apprenticeship scheme in Kenya operated under the auspices of the Anglican Church. A small number of young men are given a one-year apprenticeship course in practical farming which provides a variety of experiences for the individual student. (Individual instruction is, of course, augmented by group and classroom methods.)

Mosher (167) appears to view one of the roles of the extension agent, that of providing social support to the individual farmer, with importance. He states it this way:

The role of the extension worker that is most frequently ignored is his role as an 'encouraging companion' of the farmers in any locality who would like to try one or more new methods, but who find themselves surrounded by other farmers urging them to follow traditional methods or waiting for an opportunity to make fun of them if the new method fails (p. 133).

Mosher goes on to say that it is interesting to note that in the Francophone countries of Africa the word animateur is used for an extension agent because he is the person who "makes the farmer lively and active."

Szyliowicz (168) describes some of the problems encountered in outreach efforts to the individual farmer by the widely publicized Literacy Corps of Iran. Evidently the Army is the source institution here, the corpsmen are the agents, and the isolated peasants the clients. In view of the fact that "The Iranian peasant has traditionally been one of the
most isolated, backward, and oppressed in the world..." some type of individual instruction is probably a necessity, but the corps appears to place heavy emphasis on group instruction also.

Cameron (169) considers possible solutions to the problem of providing vocational training in agriculture to young Asian adults. He says that "It is no secret that few young men or women really select farming as their first choice for a life-long vocation." Few parents want their children to be farmers or farmer’s wives in Asia and many will do anything possible to escape from the farm. Clark states that nothing short of a "renaissance" of rural life will change this condition in Asia. The agent must be realistic about the present social situation of farmers and Cameron suggests instructional methods which are strongly project-oriented with emphasis on individual instruction projects. He recommends the farm visit as agumentative form of instruction to the traditional group-oriented methods: "As formal classroom instruction will take less than one third of the teaching time while all practical work is done on the students' farms, it goes without saying that each teacher must have good transportation to give him the necessary mobility for frequent home visits."

Lionberger and Chang (170) report that in Taiwan farmers often take the initiative in obtaining information from the agent rather than awaiting his visit. They found that "Extension workers, who... are held in high esteem by farmers, were inclined to take information and services to farmers, while the farmers, in turn, were inclined to actively seek information, particularly from farmers association extension advisers."
Farm and home visits and group meetings were rated either first or second as the most-used methods to disseminate information to farmers" (p. 180).

In Australia, Williams (171) discusses the importance of the instructional services provided by the professional consultant to the individual agriculturalist. Australian agricultural extension is associated with the State Departments of Agriculture. Instruction on agricultural technique and production method appear to be heavily group and mass oriented, but this is not necessarily the case with farm management instruction:

There is an identifiable role which is being increasingly filled in Australia for farm management specialist advice to individual farmers. This advice needs to be integrated with advice about production technique by the farm management extension officer (171, p. 166).

Of course, this is not to say that farm management extension is restricted to the personal contact method; Williams states that group and mass methods are also used in this effort.

Reports and articles Journal articles, research reports, conference reports, case studies, etc., also reflect the use of individual instruction in agricultural extension overseas.

Research by Patel (172) indicates that "individual contacts" are one of the basic channels of promoting behavioral change at the village level in India, while mass media are viewed as a supporting channel. The farm and home visits are used at a relatively high frequency by village level workers.

Another study in India concerned individual methods in combination with other methods (173). The attempt was made to detect perceived
preference of different combinations by information seekers or farmer clients and the information givers or agents relative to the introduction of hybrid cotton three years prior to the study. Findings suggest that Indian farmers attached greater preference to combinations which included the farm and home visits. On the other hand, the agents assigned higher preference to the demonstrations than to personal contact methods.

Also in India, Sinha (174) states that different types of extension teaching methods are used as a means to increase agricultural production, and "Direct contact, even though the best one, cannot shoulder the huge responsibility of approaching all the farmers at a given point of time due to prohibitive resources of time and money. Group and mass contacts, also, therefore, have been playing their part."

Rahat (175) reported a research study among immigrant groups in the new villages in Israel. Individual extension instruction was provided either by the village agent or district instructor and Rahat concludes that (p. 104) "Individual instruction was found to be the most popular of all the methods. Most of the subjects need it, and weaker groups in particular depended on it exclusively."

Verner and Gubbels (176) report a study of adoption and diffusion among dairymen in British Columbia and indicate that individual instruction is a significant method in that process. They define individual instruction as "educational activities conducted with one farmer at a time, such as farm visits by the District Agriculturalist." Their findings suggest that "...a positive correlation existed between visits to the District Agriculturalist in his office and adoption score,
but a negative relationship with farm visits by the District Agriculturalist." Individual instruction was provided not only by the District Agriculturalist, but also by the Veterinarian, Dairy Herd Improvement Association Supervisor, Salesmen, Dealers and Milk vendor fieldmen, according to the authors.

Alleyne and Verner conducted a study of commercial strawberry growers in British Columbia (177). Again, the authors note that individual instruction is provided when the client personally visits the Experiment Station at the University of British Columbia. The authors refer to this specialized form of social interaction as "advisor-advisee dyadic relationships" in reference to the individual method. The District Horticulturalist, District Agriculturalist, Salesmen and dealers, managers or employees of the strawberry processing plant and others utilize this method.

Pieper (178) has studied personal discussion as a method of agricultural extension with special reference to client expectation. In this instance the clients under study were Dutch farmers. Pieper views such discussion within the communication framework and notes that this type of communication situation is subject to considerable variation. He believes that the rapid feedback potential of personal discussion compared to other extension methods is of great advantage to the extension officer. He states that the Department of Extension Education of the Agricultural University at Wageningen provides training in the personal discussion method for prospective agents.
Fett (179) reports research findings on studies conducted by or in collaboration with the Economic Studies and Research Institute of The Federal University of Rio Grande do Sul, Brazil. Rio Grande do Sul is the southernmost State in Brazil. Fett recognizes the great importance of communication, "However, although extension agents were ingeniously using personal communication techniques, they were ignoring the mass media." Agents who worked for the three main agricultural development agencies in the State preferred to work almost exclusively through personal communication channels. As a result, communication research at the Institute has concentrated on mass teaching techniques.

Bembridge (180) explored farmer opinion in a study of extension conducted in a tribal area or Purchase Land area in Rhodesia. Findings suggest that clients have a distinct preference for direct, individual instruction: "Individual visits from extension staff were considered overwhelmingly (60% first choice, 40% second choice) to be the best way of improving knowledge...."

A study of an agricultural project in Costa Rica conducted by Herzog and Miller (181) revealed that the individual format is in frequent use according to agent report. "We asked the change agents which communication method they used in reaching the farmers and about how frequently they used each. We found that personal conversation with the farmer is, by far, the dominant mode of communication."

Curteis and Letts (182), reporting on agricultural extension education in the Northern Territory in Australia, discuss "Individual Work" (p. 74) as an instructional method in use for the Pastoral
industry. It may be provided by stock inspectors, veterinary officers, or specialists such as the botanist or field biologist: "The officer is usually called out to an emergency, e.g., stock losses, and the opportunity often occurs for discussions and demonstrations on other matters of interest."

McDowell (183) offers this comment about the dilemma of farm advisers in Western Australia:

While I agree that individual farm visits are the most effective means of extension, they are very costly and time-consuming.... During the past two or three years there has been a trend for advisers to spend more time doing experimental work, rather than making individual visits. However, if visits are not made to farmers one gets out of touch with farmers' problems (p. 154).

Johns (184) reporting on extension teaching in the Ulverstone district in Tasmania also says of individual extension methods:

The farm visit must always remain an important aspect of a district adviser's work, although not necessarily the most effective one from the viewpoint of the district as a whole (p. 157).

Chin-wen's (185) study in Taiwan indicates that preference for individual contact methods was cited most often by extension clients in all adopter categories except laggards. He emphasizes the importance of the contributions of workers in farmers' associations compared to other extension agencies and states that "In terms of 'individual contacts' local farmers' associations made the most frequent contacts with adult farmers."

**Training materials** Training manuals and texts for use in agent training contain reference to the individual mode.
Krishan (186) has prepared a text for extension workers and refers to the farm and home visit as "Individual Meetings." He believes that these meetings are very useful and are in fact the most effective medium of extension; he concedes that they can be used to a limited extent only. Individual meetings can provide on-the-spot guidance and individual attention in the home or in the field as Krishan points out.

An FAO Report (187) outlines the urgent need to develop vocational training programs for the 'older' rural youth in the 17-25 year age group. According to this report, experience in Sri Lanka and Indonesia has developed a highly relevant approach to the problem. This approach basically "...is to bring the agricultural teacher to the youth on their home farms instead of the traditional approach of bringing youth to the teacher and setting up artificial school farms. Thus it becomes a combination of extension work and agricultural education teaching" (p. 65).

El-Omari (188) cites a possible drawback at times, of the individual method in a discussion of training agents for the village level in the Sudan:

Besides working in adverse conditions the extension worker is also expected to be available for consultation and visits by his clientele during leisure as well as during working hours. This tends to keep many from joining the service (p. 72).

The U. S. Agency for International Development has prepared a Handbook (189) for agents in home economics extension. The Handbook offers advice for conducting the home visit, office call, result demonstration and personal letter as individual methods.
Savile (190) has prepared a practical guide for the training of extension workers of developing countries in the tropics. He states that "Although a great deal of extension teaching is done in groups, learning is always an individual process. Frequently individual meetings are needed to persuade a farmer to adopt a new practice" (p. 56). Accordingly, he gives ample attention to individual methods (see p. 75 in Savile).

Bradfield (191) has prepared a manual for pre-service and in-service training of agricultural extension workers in Malawi, but states it has general application to countries in the process of establishing extension services. He notes three types of individual methods: farm visits, calls or inquiries, and letters. He includes a discussion on their effective use, and their relative advantages and limitations.

Maunder (192) has provided this admonition to the agent:

Learning is an individual process. Although extension agents must use group and mass methods to reach large numbers of people and to stimulate joint action in planning and carrying out projects of common interest, personal contacts serve many essential purposes (p. 151). Maunder discusses the purposes and function of farm and home visits, office calls, telephone calls, personal letters and informal contacts. He also offers practical suggestions for individual teaching by international agricultural extension workers.
DISCUSSION

This chapter will begin with a review of the limitations of this research and attempt to discuss indications of the results of the study by way of interpretations and conclusions. Directions for additional research in this area will be noted and implications of the study explored.

Limitations of the Study

This study shares most of the limitations common to other survey, questionnaire, and library research. Additionally, some problems unique to this project were encountered.

At the national level, it becomes immediately apparent that individual instruction is an elusive phenomenon and certain conceptual problems arise in connection with differentiating between the direct and indirect modes.

Distinctions between primary and adjunct forms might be viewed as tenuous because any instructor can presumably provide individual instruction if he so desires. The distinction between routine offering and client demand can be problematic. Questions arise about the validity of an instrument of this type with such broad response categories. It is reasonable to be concerned whether or not the instrument is actually detecting the direct mode. Reliability of the instrument is also of concern in the sense that similar data would be obtained if the survey were repeated. A related problem centers on the sensitivity of the instrument and the difficulty of designing a sensitive enough instrument without sacrificing brevity.
Additional to problems with instrument design, there is no concise way of prescribing what constitutes general university extension at the national level. Here the definition was expanded to include evening divisions and continuing education forms at the university level. Some institutions might be perplexed that this can include on-campus instruction for adults also.

Reliance on one individual to make judgemental responses about the phenomenon may also be a drawback. On the one hand, the Dean of Extension might be considered to be the most knowledgeable person about the overall program, but some Deans might have more of an interest in or more accurate knowledge of instructional processes than others. First-hand knowledge about individual instruction might increase when Deans have longer periods of service in that position, etc. In any case, the responses must be interpreted as a guide to understanding the phenomenon and, for the present, are not supported by more objective data.

The type of extension model in use by the university is also a complicating factor. Some institutions may have combined services while others have separate services or only general extension or Cooperative Extension. Some institutions extend the "whole university," others may have large extension divisions, small administrative units, etc.

At the State level, problems also exist with the instrument design. Whenever a topic is approached directly on a questionnaire (instead of comparative or inferential approaches) there is a danger of setting up demand characteristics of the instrument. Respondents may feel that individual instruction is suddenly in vogue and try to answer the
questions in a socially approved manner. This risk of distortion can be reduced somewhat by the technique of imbedding items of interest in a longer questionnaire. Here the direct approach was justified because no previous baseline data could be located.

On the State Questionnaire, the relationship of the individual items to the five major program development process must be taken as provisional. This relationship has not been verified and was used to generate the items. It is retained as a summarizing device for hypothesis testing only.

At the international level, it is not possible to make inferences about the material, indeed, it is difficult enough to generalize. The material must be viewed as limited to descriptive use. It is not necessarily representative and certainly not exhaustive. The research topic is too narrow to conduct frequency counts or apply meaningful tests of recurring themes and similar quantified library research. This level is also subject to the limitations of interlibrary loan systems.

With the above restrictions in mind, we now turn to the indications which this study has produced about the phenomenon of individual instruction in extension education.

Indications

This section will attempt to include interpretive statements and provide brief concluding remarks about the research.
Interpretations

A few brief interpretations may be useful before conclusions are drawn. Despite problems associated with a survey of this nature, a relatively substantial response rate of 87% was obtained at the National level. (Six institutions responded after the closing date during the month of January 1976, but are not included in any way in the analysis.) A total of 7 forms were returned uncompleted for the following reasons:

1- Discontinued evening extension division
2- Addressee had terminated employment with university
3- No courses in extension recently
4- Request for clarification of term "extension"
5- No extension courses offered
6- No direct mode offered.

The relatively high Chi Square values are interpreted as an indication that the phenomenon of direct, individual instruction and related factors are not arbitrarily dispersed within general extension as measured by this instrument. It would appear that responses were not arbitrary. It is interpreted as a rather significant circumstance that all of the null hypotheses are rejected at the .001 confidence level.

Item 10 on the National Survey instrument was not a structured item. It was speculated that there would be no responses or very few responses to this item. However, this did not prove to be the case. In fact, 81 responses were obtained. The following is a breakdown of the 51 specific examples of the use of the phenomenon in extension programs as reported:
A total of 16 institutions mentioned the prohibitive cost of the direct mode.

A total of 132 institutions requested a synopsis of findings. (Please refer to Exhibits 7A and 7B.) This may be interpreted as an interest in the direct mode, but may also simply indicate the desire to keep abreast of research events.

The exceptionally high response rate at the state level is noteworthy. Here the null hypotheses S-1, S-2, and S-3 were rejected but S-4 was not rejected with three non-significant items and S-5 was not rejected with two non-significant items. The fact that S-5 includes three highly significant items as well, might indicate an equivocal finding for this hypothesis, but the parsimonious view is held until further explanatory data is obtained.

Here also the final item (No. 26) of the State Questionnaire instrument was not structured. It was anticipated that a very low level of responses would be obtained for this item, but again, the item produced results contrary to this expectation. A total of 91 responses to this item is interpreted as startling. Furthermore, many of these
responses can be interpreted as favorable to the use of the individual method. Some provide specific examples in their jurisdictions. It appears reasonable to interpret this high number of responses as corroborative evidence that agents of extension in the CES of Iowa do not lack interest in individual instruction. Data resulting from this level of the study were shared with all Extension Directors as shown in Exhibits 8A and 8B.

Research at the international level produced a fairly substantial number of references about the individual method. The use of correspondence study appears widespread in general extension. No doubt it would be possible to locate more citations on the use of correspondence study overseas, but there is no reason to needlessly overload this one category. It appears that correspondence instruction is often combined with other forms.

It does not come as a surprise that the individual method is also widely used in agricultural extension because of its association with the farm visit and the home visit.

Conclusions

Based upon this research, it appears reasonable to conclude that the direct mode occurs at a very low level in general extension, both as a primary form and as an adjunct form of instruction. In fact, it is probably not available at all as a primary form from many extension divisions. Total availability is very low and the phenomenon is used in very few course offerings and very few subject areas. Very low to low
or moderate attention is given to the self-directed learner by general extension. Student need of individual instruction of the direct mode was assessed as moderate to low or very low. Instructor interest was reported as very low to low or moderate. Most institutions anticipate no change in future use of the direct mode.

Evidence at the state level suggests that individual instruction still occupies a meaningful place in the extension program of the CES. Significant opinion was expressed on items related to need assessment, program objectives, and the design of program strategy. Significant opinion was not expressed on items related to program implementation and program evaluation. Somewhat unusual findings on program evaluation suggests that this is an area which needs clarification.

Library research indicates that the individual method does occur in extension education at the international level. A number of descriptive references were located. It was found convenient to classify these loosely as correspondence study, extra-mural study, the tutorial, and instructional technology. Citations relative to the individual method occur in agricultural extension especially in agricultural development reports, research reports and articles, and training manuals. These classifications must not be considered as rubric, but simply help organize reporting. The correspondence course appears to be a relatively vigorous form internationally, but it is not without its problems. The farm visit and individual agricultural advisory seem to be viable forms, at this time, in a number of locations.
Directions for Further Research

Ideas for further research in this area can be derived from a consideration of the extension model developed from the information model. For example, there may be other institutions or organizations (instead of universities) which have an interest in extension such as liberal arts colleges, community colleges, proprietary schools, government agencies, businesses, etc. Many of these actively extend education and some may do so on an individual basis. The study of special programs and specific subject areas might be revealing and useful.

Research on institutional membership such as the Association for Continuing Higher Education (ACHE), National University Extension Association (NUEA), National Association of State Universities and Land Grant Colleges (NASULGC), and others might prove fruitful. Such research might be planned for various levels including the international level. For example, Britain's Council for National Academic Awards (CNAA), the United Nations University and other organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) might be interested in extending instruction or individual services of an educational nature to the individual adult.

Likewise, it might be interesting to conduct further research related to the agents of extension education. Instructors who are active in general university extension might provide insights on the efficiency, appropriateness or desirability of individual instruction. Perhaps this could be done on a random basis. Analysis of random
samples of agents of the Cooperative Extension Service might permit
generalization on the subject outside the borders of Iowa.

Notably absent from this research are provisions for examining the
viewpoint of the client on a systematic basis. Perhaps this would yield
important results in areas such as alternative programs and non-
traditional programs. In any case, perhaps the best way to find out
about client needs for individual instruction is to ask the client.

More refined research is indicated on the nature of the phenomenon
itself. This includes theoretical as well as empirical and applied
research. Labels such as the tutorial, private advisement, personal
consultation, etc., are often inadequate to provide meaningful under-
standing of the phenomenon. Additional to conceptual delineation,
factors such as credit, non-credit, on-campus or off-campus, traditional
or non-traditional, etc., could be probed in general extension.

Associated factors in agricultural extension could also be analyzed more
extensively. For example, the farm visit might be on the decline in some
areas but not the office visit. Research in instructional method is
admittedly a difficult undertaking, especially in informal education.
However, computerized manipulation of data, and use of analytic tools
such as regression analysis (193) or factor analysis might ultimately
inspire more trials.

The relationship of individual library service to extension
education is not clearly understood. At the university level, MacDougall
(194) found that correspondence students were permitted use of the
extension library in 10% of the cases. (Some libraries had no reader
restrictions.) MacDougall believes that the university library will assume an increasingly important role as the public becomes more aware of new forms of higher education such as external degree programs, lifelong education, non-traditional studies, etc. Perhaps its role to extension clients could be researched.

Another area which needs clarification through research is the relationship of adult counseling to extension education. Perhaps educational counseling to extension clients could be studied from the viewpoint of content as well as process. It might be that the direct form might become increasingly important in areas where content is of an intensely personal nature such as death education (195), leisure education (196), and drug education (197). Presumably, indirect counseling of the individual is often not as efficacious as the direct mode. What are the factors associated with this conclusion? Hollis and Hollis (198) view the counseling process as information transfer to the individual and this approach might provide numerous research leads in adult counsellor education.

The topic of the prohibitive cost of individual instruction might be an excellent subject for action research. Frandson (199) has commented that general extension is "at the mercy of the marketplace" and Kidd (200) has given attention to the problem of money in continuing education. Service research at specific institutions might be indicated here.

Finn (201) has suggested that the field of instructional technology is still emerging. One might anticipate more technology, improved
technology and new technology in extension. The abundance of hardware might suggest research on how to improve the quality of the software as far as the individual information recipient is concerned. Also maybe instructional technology will never completely obviate the need for the direct mode.

Research at the international level might yield new applications or show new avenues of applicability for individual instruction. Schultz (202) expresses the view that "...on-the-job training and apprenticeships, while exceedingly useful in industry, are seldom applicable to agriculture in poor countries." It is important to find out why not (or perhaps what is applicable) by way of the individual method if this claim can be supported.

Implications

Perhaps a foremost implication of this study is that consideration must be given to all instructional methods depending upon the situation, the resources and the need. This strongly implies that the individual method should not be overlooked in planning and program development. The assertion that mass problems require mass teaching methods is an oversimplification.

Allen Tough (64) has provided implications of his study of adult learning projects relating to institutions and instructors. One of his practical implications is the need to "Increase the student's choice of how he learns" (p. 147). Surely this has implications for including the individual method. Perhaps many extensionists have settled into the
comfortable position that conferences, classes and institutes constitute the very essence of extension education.

Wedemeyer (203) has made the prediction that correspondence instruction at the university level will increase in the future. He makes the interesting observation that "Correspondence instruction will be utilized in many more countries throughout the world; and in newly emerging nations, correspondence study will play its older role of frontier-type education." The correspondence course combined with other forms also has many international implications and indications of potential.

Apparently it is very easy to dismiss the individual method under some circumstances. Berg (204) discusses the use of one-to-one in nutrition education and concludes that "The personal transfer of information obviously has merit. But even assuming that person-to-person nutrition education translated to a large-scale effort can sustain accuracy in its instruction and enthusiasm in its workers, it cannot overcome the basic limitation of person-to-person communication: the size of the audience" (p. 79).

Exaggerated claims for the need, provision and utility of individual instruction are unwarranted. Nevertheless, it would seem that this planet has problems of sufficient magnitude to justify explanation of all reasonable methods of teaching and to render the categorical dismiss all of any single method inappropriate.

The emanity of ethnic intolerance, poverty, hunger, population problems and kindred quandries tends to suggest that education can be
used as an ameliorating factor at times. The exploitation of all workable instructional methods is a desirability if not a necessity. Both urban and rural problems need educational attention. "Even today, after a century of industrialization and urbanization, half the world's working population are still employed in agriculture," according to Grigg (205).

Brown (206) has indicated that "Educational systems everywhere are under great stress, in part because of the sheer lack of resources and in part because of the lack of relevance, a failure to change and adapt" (p. 115).

Food production is an important global problem and perhaps extension can play a more significant role in this and many other areas if it is willing to change and seek new instructional applications.

The vision of armies of instructors or armies of volunteers may give way at some point to a less complex vision of people teaching each other on an individual basis. The "lightning literacy" example of the Laubachs (207) missionary campaigns presumably contains some kind of individual instruction component. When "each one" does in fact "teach one" the individual thrust could be compounded to achieve a mass effect.

Self-direct instruction may be exceptionally difficult in some developing countries. Altbach (208) states that "Most Third World people have limited access to the world body of knowledge, and even information about their own countries is often hard to come by." And yet, Coombs (209) has conducted a study on non-formal education for the World Bank and suggests that serious attention be given to fostering self-
instruction in overseas areas. He recognizes that each country must formulate its own appropriate instructional strategies, but he would like to see increased reliance on self-instruction instead of "face to face teacher to learner methods" (p. 171).

The seriousness of disease, famine, war, and ecological problems would seem to suggest that all options should be kept open and no one method excluded on general principle. Someone has made the observation that simply giving people information about agriculture is not the same as teaching people how to farm. Perhaps this same logic holds in other fields -- health, family planning, nutrition, etc. Perhaps dealing more with the individual recipient of information can provide more personalized instruction and achieve more desirable results.

Domestically, the question of why people engage in adult education has been of interest (210). Burgess (211) conducted an investigation using factor analysis and identified various "desires" on the part of the participant in group instruction. Ebert (212) reports on reasons for participation at a specific group extension function. Also using factor analysis, he isolated "A Desire to be Intellectually Curious" as the most important influence for participation. Perhaps it is not unreasonable to assume that this same desire could be present in persons who could benefit from an educational experience but who cannot or will not participate in groups. Individual instruction may have application in combatting various forms of functional incompetence in basic communication skills within the adult population in this country.
People have interests (213). People have wants and needs. Some of these can be satisfied through extension education. It is reasonable to assume that some can and should be satisfied through individual instruction. The question of why people do not engage in group instruction (or why they disengage) might also be a meaningful topic of study.

It is an ancient principle that a student is responsible for his own learning. But this principle may be more appropriate in this age to formal education rather than to non-formal types. Perhaps many instructors and extensionists feel a responsibility for getting instructional information to the people. And many people today might feel at times that they "need help" (214).

Lack of use of the individual instruction method may not simply be an oversight in some cases. Perhaps the social climate may have an influence on learning trends. Sometimes it seems that extreme effort is made in some quarters to promote group warmth and community participation in adult education.

The self-directed individual might indeed wonder if he is missing something and might even experience pressure to conform to group activity. The individual studying alone in a library might be viewed with suspicion in some instances and even be considered "too much of a loner." Group counseling, group correspondence courses and group self-directed instruction might be emphasized under those circumstances.

Back (215) has traced the development of certain group instructional movements such as sensitivity training and encounter type instruction.
Back states that the right to privacy is a legal right as well as a human right but he makes this comment: "The norms of encounter groups frequently treat this right as obnoxious, and the social pressures within these groups is to persuade the person to surrender it" (p. 221).

People need group stimuli and can benefit from group instruction, without doubt. However, learning is ultimately an individual matter and some adults may at times wish to treat it as a private matter. Sometimes group stimuli may be extraneous for the individual learner.

Some instructors may be willing to conceive of themselves as important channels of information transfer to the individual rather than to the aggregate. Probably not all extensionists would be willing to accept sheer numbers of contacts as the sole criterion of success in their work. As indicated in Figure 4, perhaps more agencies can become concerned with the transfer of thought to the individual learner also.

![Figure 4. Individual Instruction Model](image.png)

Some comments on the National Survey form of this research seemed to suggest that the direct mode of the individual method is completely out of the question in general extension for financial reasons. It is noteworthy to recall here that the direct mode exists only at a very low level, but it does exist. Perhaps the instrument did not detect many
important forms. For example, at Iowa State University, the Center for Industrial Research and Service (CIRAS) relies almost exclusively on the individual method. Indeed, at times it must, because plant managers in need of business failure counseling are very unlikely to air their problems at meetings. The plea of no money may sometimes be a convenient excuse for extensionists to avoid a change.

Announced requirements for a minimum number of participants in a course may be misleading. Individuals might often be willing to pay higher fees and their sponsoring organizations or businesses might often bear the increased cost of providing individual instruction.

In one sense, all instructors are ultimately interested in the individual learner. The extensionist who prepares teaching material for the mass media is of necessity concerned that the individual understand his material. However, many may be unwilling to try to abolish rigid structures which tend to inhibit the individual learner.

Perhaps many extensionists would be in substantial agreement with Wedemeyer (216) in recognizing the need to abolish space/time limitations on learning. Yet, actually to accomplish this might require effort and it might require risk. Knowles and Hill (217) provide evidence which suggests that an individual course might require more teaching effort on the part of the instructor when compared to the traditional course format. Subjects in this study were all "mature, full-time employed adults." More work on the part of the instructor is not necessarily an inviting prospect when considering implementation of individual instruction. In some circumstances, maybe this must be a consideration.
Classical learning theory is considered in this study to be inadequate to explain human learning. The information theory was selected as a theoretical reference because of its applicability to the extension enterprise. However, extensionists were admonished not to embrace information theory to the exclusion of all others. Information transfer is still problematic and complex. Simon (218) makes the suggestion that we are living in an "information rich" world and seems to propose that a good information system should not give maximum information but instead provide the least amount of information that will serve our needs. Extensionists must cope with the problem of information overload in clients.

Bates (219) discusses the concept of "life information" or that information needed for successful living. This can cover a wide range of need from sheer survival to very advanced forms of self-realization, she states. Bates identifies the trend toward "repersonalization" of information through selective dissemination of information or SDI. She believes that "Personalized, individualized information service by 'people oriented' people" will be a trend of the future in library service. This comes very close to what individual instruction in extension is all about.

Lacy (220) has discussed various implications of communications for mass audiences and for individual audiences. He states that some technological devices such as the telephone contribute to the enhancement of personal communication, but generally every technical or social advance in communication tends to amplify the power of the speaker and make it
possible for him to reach bigger and bigger audiences. He sees this
trend as progressing upward since the invention of the printing press.
He then makes this comment:

Almost alone among the devices of our society in
reversing this ratio and linking the single reader or
listener or seeker to myriad sources of information,
ideas, and inspirations among which he can choose,
rather than linking the single voice or image to an
audience of millions, is the library.

It appears that the library is almost the only agency which routinely
exhibits interest in the individual adult learner, in Lacy's view,
extension could be and perhaps should be another such agency, in
instances where it is not now so engaged.

Information is something that can make a difference in the life of
the individual. (Someone has described that something as the "difference"
that makes a difference.) If a need increases and the extension
establishment does not assume leadership in this area of individual
information transfer perhaps other agencies will.

Non-traditional forms might increase the need for direct individual
instruction such as the mentor-mentee relationship. Yet it appears that(extension has not assumed leadership in this field (31). The indirect
mode may be vigorous nationally but not the direct mode, according to
this study. Rapid changes in agriculture and the American countryside
might necessitate rapid modification of CES programming. Will the
individual method retain its utility? What about new applications?
Failure to exploit the individual method more fully at the international
level could mean the loss of a valuable tool for change.
Extensionists cannot simply throw information at people on a take it or leave it basis. Eliot asks penetratingly:

Where is the life we have lost in living?
Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information? (221).

The meaningful educational use of information can enrich human life, and it follows that it should be dispersed in all appropriate forms. In fact, some information and help must be given on an individual basis, not only in problem-centered, but also in goal-directed instruction. Extension might do well to re-examine the relevance of individual instruction for the future.
SUMMARY

Exploratory research on the subject of individual instruction in extension education was conducted at three levels, national, state and international. These were the United States, the State of Iowa, and overseas areas other than the U. S.

Interest in the topic of individual instruction arose from the observation that individualized forms are currently of considerable importance in other areas of education. The central research idea was to determine whether this is also the case in extension.

A literature search failed to reveal previous studies on this specific subject, although the individual method receives attention in extension literature -- often in contrast to other methods.

University extension is an important form in this country. It has developed into an enterprise of enormous complexity, but many observers agree that it consists of two main currents: general and agricultural. Historical indications suggest an early relationship of individual instruction with university extension.

The study uses information theory as a theoretical basis for inquiry and a departure point in construction of research design. The phenomenon of individual instruction was dichotomized into two main modes: direct and indirect.

General extension appears to have had an early interest in the indirect mode. The status of the direct mode in general extension was not known. Agricultural extension appears to have had an early interest in
both modes. Current opinion about the phenomenon of practitioners was not known. The use of individual instruction in overseas areas was also not clear.

The research method utilized survey, questionnaire and library research. At the national level, University Extension Deans were queried by survey to assess the status of the direct mode at their institutions. At the state level, Cooperative Extension Directors were asked their opinion of individual instruction using a prepared questionnaire form. Library research was conducted at the international level.

Findings at the national level suggest that the direct mode exists only at a very low level. The direct mode is a very elusive phenomenon and is difficult to detect. At many institutions the systematic use of this mode might be very low indeed. Specific examples of its use were elicited by the survey instrument, however. Consequently, it would be incorrect to surmise that the mode is completely non-existent in organized programs.

Findings at the state level suggest that significant opinion is held about the use of individual instruction in some areas of program development. It would appear that the long association of the individual method with agricultural extension has not diminished its perceived status as one of importance and relevance. The unusually high number of responses and their favorable nature seem to indicate that Extension Directors are not indifferent to the method.

Evidence does exist at the international level of the use of the individual method both in university and non-university forms.
Applications of the correspondence course and the farm visit are described at a number of overseas locations.

Although this study has conceptual as well as mechanical limitations, indications are that it served an exploratory function on the subject. Individual instruction appears to have a significant place in extension and further research in several areas might prove fruitful.

An implication of the study is that the individual method should not be overlooked in program development. Perhaps all extensionists can be alert to new applications of the method. At times it might be too easy to overlook, disregard or discuss the potential of individual instruction in its various forms and modes.


58. Grabowski, Stanley M. Motivational patterns of adult participants in independent study programs. Continuing Education for Adults. Syracuse, New York: University College, Syracuse University, No. 179, December 1972.


159. Holmberg, Borge. Correspondence study, lost or found? Convergence 5, No. 2 (1972):7-14.


Name of University ___________________________________

This short survey is an attempt to explore selected dimensions of direct, individual instruction in university extension. "Extension service" as used on this form includes general university extension, continuing higher education, university adult education, and higher adult education activities -- both on and off-campus.

A distinction is made between direct and indirect, individual instruction.

DIRECT, individual instruction is a process of providing private instruction to one learner; teacher and learner are face-to-face, as in the private tutorial, private conference, and personal consultation.

INDIRECT, individual instruction is mediated by some means additional to a live teacher; teacher and learner need not be contiguous, as with the correspondence course, computer-assisted instruction, and talk-back telephone.

DIRECT, face-to-face, individual instruction is of interest in this survey. Please keep this in mind when marking your responses.

1. To what extent does your extension service offer direct, individual instruction as a primary form, or chief teaching method?

☐ High ☐ Moderate ☐ Low ☐ Very Low ☐ None

2. To what extent does your extension service offer direct, individual instruction as an adjunct form, supplemental to other (i.e., indirect, individual; group; mass; etc.) types of instruction?

☐ High ☐ Moderate ☐ Low ☐ Very Low ☐ None

3. What is your estimate of the total availability of direct, individual instruction to the clientele of your extension service?

☐ High ☐ Moderate ☐ Low ☐ Very Low ☐ None

4. To what extent is direct, individual instruction available from your extension service, relative to different course offerings?

☐ In Most ☐ In About ☐ In Several ☐ In Very ☐ None

Half Few

5. To what extent is direct, individual instruction available from your extension service, relative to different subject areas?

☐ In Most ☐ In About ☐ In Several ☐ In Very ☐ None

Half Few
6. How would you describe the amount of effort made by your extension service to assist the self-directed, adult learner (on a direct, individual basis) such as personal guidance, reader's advisory, private referral, etc.?

☐ High ☐ Moderate ☐ Low ☐ Very Low ☐ None

7. How would you characterize adult student need for direct, individual instruction from your extension service?

☐ High ☐ Moderate ☐ Low ☐ Very Low ☐ None

8. How would you estimate instructor interest in providing direct, individual instruction to adult learners in your extension service?

☐ High ☐ Moderate ☐ Low ☐ Very Low ☐ None

9. To what extent do you anticipate the future use of direct, individual instruction by your extension service?

☐ Considerably more than we presently do

☐ More than we presently do

☐ About the same

☐ Less than we presently do

☐ None

☐ Please check here if you wish to receive a synopsis of the results of this survey.

(Continued on next page)
10. On this page, you might wish to comment briefly on the use of direct, individual instruction by your extension service. Please include specific examples.
Dear Colleague:

A survey of selected institutions of higher education is being conducted by the Adult and Extension Education Section of the College of Education to determine the extent to which the phenomenon of direct, individual instruction may be present in general university extension. We solicit your cooperation in this study.

This survey is limited to universities believed to have an interest in extension education. In this case, the term "extension" is used for convenience to include general extension services, continuing education divisions, and similar designations. The activities of the Cooperative Extension Service are not included in the survey.

Regrettably, the survey technique is the only feasible method of eliciting the information at this time. We are most sympathetic about the myriad of survey forms traversing the country these days and impinging upon your desk.

Yet, progress can sometimes be made by short steps. This form is short as you will note, and we hope you will assist us in taking a few minutes to complete it. A pretest of the form suggests that it can be completed in not more than twenty minutes. We will be glad to send you a synopsis of results, if you wish.

A self-addressed, stamped envelope is enclosed for your convenience.

Sincerely yours,

Charles E. Donhowe
Dean, University Extension

Enclosures
National Survey Form
Reply Envelope
Dear Colleague:

This is a reminder that we would appreciate very much your cooperation in returning the attached survey form with appropriate information about direct, individual instruction in the general extension service or continuing education division of your university.

Admittedly, this age of the survey can present considerable annoyance. None of us would, however, dispute the value of our work and we are convinced of the utility and value of research relating to that work.

We would not have attempted a study of this nature, were it not for our feeling that progress can still be made through cooperating with each other.

Won't you please reply by sending the completed form in the self-addressed, stamped envelope as soon as possible?

Sincerely yours,

Charles E. Donhowe
Dean, University Extension

Enclosures
National Survey Form
Reply Envelope
Dear Colleague:

We would be most grateful if you or someone whom you designate would fill out the enclosed survey form and return it to us.

Certainly, it can be antagonizing to be confronted by eternal surveys. Still, we venture to say that you or a knowledgeable person on your staff can complete this very short form in less than twenty minutes. If you could take this small amount of time, it would be of valuable assistance to us in increasing our return rate.

We hope you will agree with us on the value of research to our profession. The problem is how to obtain beneficial information without causing undue inconvenience to respondents. In this case, every effort has been made to emphasize brevity and ease of completion of the form.

Some of the data are already coming in and we are beginning analysis. In the analysis, no institution will be individually identified. All participating universities will, upon request, be sent a synopsis of findings. Unfortunately, it will not be possible to include your university in the survey if we do not obtain your reply within two weeks from the date you receive this letter.

I would appreciate hearing from you as soon as you can have the form completed. Please disregard this letter if you have already mailed yours.

Sincerely yours,

Charles R. Donhowe
Dean, University Extension

Enclosures
National Survey Form
Reply Envelope
Auburn University - Alabama
University of Alabama
Tuskegee Institute - Alabama
University of Alabama in Birmingham
University of Alaska
Northern Arizona University
University of Arizona - Tucson
Arizona State University - Tempe
University of Arkansas - Fayetteville
University of Arkansas at Little Rock
University of California, Berkeley
California State University, Chico
University of California - Davis
California State University, Fullerton
California State University, Hayward
University of California, San Diego
University of California, Irvine
Loma Linda University - California
University of Southern California, Los Angeles
California State University, Los Angeles
University of California, Los Angeles
California State University, Long Beach
Pepperdine University
California State University, Sacramento
California State University, San Diego
San Diego State University, San Diego
U.S. International University, San Diego
San Jose State University, San Jose
University of Santa Clara
Colorado State University, Fort Collins
University of Colorado, Boulder
University of Northern Colorado, Greeley
Fairfield University, Connecticut
University of Connecticut, Storrs
University of New Haven, West Haven
University of Bridgeport, Connecticut
University of Hartford, Connecticut
University of Delaware
Catholic University of America
Georgetown University
The American University, Washington, D.C.
George Washington University
Washington Technical Institute
Florida Agricultural & Mechanical University
Florida Atlantic University
Florida State University, Tallahassee
University of Florida, Gainesville
University of South Florida, Tampa
Stetson University
University of Miami, Coral Gables
University of North Florida, Jacksonville
University of West Florida, Pensacola
Florida International University, Miami
Emory University, Atlanta
Georgia Institute of Technology
Georgia State University, Atlanta
University of Georgia, Athens
University of Hawaii at Manoa
Idaho State University, Pocatello
University of Idaho, Moscow
Bradley University, Peoria
Eastern Illinois University, Charleston
DePaul University, Chicago
Northern Illinois University, DeKalb
Northwestern University, Evanston
Illinois Institute of Technology
Southern Illinois University at Carbondale
Roosevelt University, Chicago
Western Illinois University, Macomb
Illinois State University, Normal
University of Illinois, Urbana
Ball State University
Indiana State University, Terre Haute
Indiana University, Bloomington
Purdue University, Lafayette
University of Notre Dame
Iowa State University
Drake University, Des Moines
Upper Iowa University
University of Northern Iowa
University of Iowa
Kansas State University
Wichita State University
Washburn University
University of Kansas, Lawrence
Eastern Kentucky University
University of Louisville
University of Kentucky
McNeese State University
Tulane University of Louisiana
Southern University, Baton Rouge
Louisiana State University
University of New Orleans
Loyola University in New Orleans
University of Maine, Orono
University of Maine at Augusta
The Johns Hopkins University
University of Maryland
Boston University
Clark University
Harvard University
University of Chicago
Loyola University, Chicago
Northeastern University, Boston
University of Massachusetts, Amherst
Tufts University
Oakland University, Rochester
Northern Michigan University, Marquette
Michigan Technological University
Eastern Michigan University, Ypsilanti
Central Michigan University
Wayne State University
Western Michigan University
Michigan State University
University of Michigan
University of Southern Mississippi
University of Mississippi
Mississippi State University
University of Missouri - St. Louis
University of Missouri - Rolla
University of Missouri - Columbia
Washington University, St. Louis
St. Louis University
Montana State University
University of Nebraska - Lincoln
University of Nebraska at Omaha
University of Nevada, Las Vegas
University of Nevada, Reno
University of New Hampshire
Rutgers University
Drew University
Eastern New Mexico University
New Mexico State University
University of New Mexico
State University of New York at Albany
Fordham University
Adelphi University
Columbia University
City University of New York
New School for Social Research
New York University
Syracuse University
New York Institute of Technology
State University of New York, Oswego
University of Rochester
Rochester Institute of Technology
State University of New York at Buffalo
North Carolina State University, Raleigh
Appalachian State University
East Carolina University
University of North Carolina, Chapel Hill
North Carolina Agricultural & Technical State Univ.
North Dakota State University
University of North Dakota
Ohio University
Kent State University
University of Toledo
Bowling Green State University
University of Cincinnati
Cleveland State University
Miami University
Ohio State University
Wright State University
Youngstown State University
University of Oklahoma
Oklahoma State University
Oregon State Higher Education System
Oregon Institute of Technology
University of Pennsylvania
Drexel University
Villanova University
Indiana University of Pennsylvania
Pennsylvania State University
Temple University
University of Pittsburgh
University of Rhode Island
Brown University
Clemson University
University of South Carolina
University of South Dakota
South Dakota State University
University of Tennessee, Nashville
University of Tennessee, Knoxville
Tennessee Technological University
Tennessee State University
University of Tennessee
Middle Tennessee State University
Memphis State University
East Tennessee State University
Southern Methodist University
University of Texas, Austin
Texas A & M University
Texas Tech University
University of Houston
Baylor University
University of Utah
Brigham Young University
Utah State University
University of Vermont
Virginia Polytechnic Institute & State University
Virginia Commonwealth University
Old Dominion University
University of Virginia
University of Washington
Washington State University
West Virginia University
Marquette University
University of Wisconsin - Green Bay
University of Wisconsin - La Crosse
University of Wisconsin - Madison
University of Wisconsin - Oshkosh
University of Wisconsin - Stevens Point
University of Wisconsin - River Falls
University of Wisconsin - Platteville
University of Wisconsin - Whitewater
University of Wisconsin - Stout
University of Wyoming
Auburn University - Alabama
University of Alabama
Tuskegee Institute - Alabama
University of Alabama in Birmingham
University of Arizona - Tucson
Arizona State University - Tempe
University of Arkansas - Fayetteville
University of Arkansas at Little Rock
University of California, Berkeley
California State University, Chico
California State University, Fullerton
California State University, Hayward
University of California, San Diego
University of California, Irvine
Loma Linda University - California
University of California, Los Angeles
California State University, Long Beach
Pepperdine University
California State University, Sacramento
California State University, Los Angeles
San Diego State University, San Diego
U. S. International University, San Diego
San Jose State University, San Jose
University of Santa Clara
Colorado State University, Fort Collins
University of Colorado, Boulder
University of Northern Colorado, Greeley
Fairfield University, Connecticut
University of New Haven, West Haven
University of Bridgeport, Connecticut
University of Hartford, Connecticut
University of Delaware
Catholic University of America
Georgetown University
The American University, Washington, D.C.
George Washington University
Florida Agricultural & Mechanical Univ.
Florida Atlantic University
Florida State University, Tallahassee
University of South Florida, Tampa
Stetson University
University of Miami, Coral Gables
University of North Florida, Jacksonville
University of West Florida, Pensacola
Florida International University, Miami
Emory University, Atlanta
Georgia State University, Atlanta
University of Georgia, Athens
University of Hawaii at Manoa
Idaho State University, Pocatello
University of Idaho, Moscow
Eastern Illinois University, Charleston
DePaul University, Chicago
Northern Illinois University, DeKalb
Northwestern University, Evanston
Illinois Institute of Technology
Southern Illinois University at Carbondale
Roosevelt University, Chicago
Western Illinois University, Macomb
Illinois State University, Normal
University of Illinois, Urbana
Ball State University
Indiana State University, Terre Haute
Indiana University, Bloomington
Purdue University, Lafayette
University of Notre Dame
Iowa State University
Drake University
Upper Iowa University
University of Northern Iowa
University of Iowa
Kansas State University
Wichita State University
Washburn University
University of Kansas, Lawrence
Eastern Kentucky University
University of Louisville
University of Kentucky
McNeese State University
Southern University, Baton Rouge
Louisiana State University
University of New Orleans
Loyola University in New Orleans
University of Maine at Augusta
The Johns Hopkins University
University of Maryland
Harvard University
University of Chicago
Loyola University, Chicago
Northeastern University, Boston
University of Massachusetts, Amherst
Tufts University
Oakland University, Rochester
Northern Michigan University, Marquette
Michigan Technological University
Eastern Michigan University, Ypsilanti
Central Michigan University
Wayne State University
Western Michigan University
Michigan State University
University of Michigan
University of Minnesota
University of Southern Mississippi
University of Mississippi
Mississippi State University
University of Missouri - St. Louis
University of Missouri - Columbia
Washington University, St. Louis
St. Louis University
Montana State University
University of Nebraska - Lincoln
University of Nebraska at Omaha
University of Nevada, Las Vegas
University of Nevada, Reno
University of New Hampshire
Rutgers University
Eastern New Mexico University
New Mexico State University
University of New Mexico
State University of New York at Albany
Fordham University
Adelphi University
Columbia University
New School for Social Research
New York University
Syracuse University
New York Institute of Technology
University of Rochester
Rochester Institute of Technology
State University of New York at Buffalo
North Carolina State University, Raleigh
Appalachian State University
East Carolina University
University of North Carolina, Chapel Hill
North Dakota State University
University of North Dakota
Kent State University
University of Toledo
Cleveland State University
Miami University
Ohio State University
Wright State University
Youngstown State University
University of Oklahoma
Oklahoma State University
Oregon State Higher Education System
Oregon Institute of Technology
Drexel University
Villanova University
Indiana University of Pennsylvania
Pennsylvania State University
Temple University
University of Rhode Island
Brown University
Clemson University
University of South Carolina
University of South Dakota
South Dakota State University
University of Tennessee, Nashville
University of Tennessee, Knoxville
Tennessee Technological University
Tennessee State University
University of Tennessee at Chattanooga
Middle Tennessee State University
Memphis State University
East Tennessee State University
Southern Methodist University
University of Texas, Austin
Texas A & M University
Texas Tech University
University of Houston
Baylor University
University of Utah
Brigham Young University
University of Vermont
Virginia Polytechnic Institute & State Univ.
Virginia Commonwealth University
Old Dominion University
University of Virginia
Washington State University
West Virginia University
Marquette University
University of Wisconsin - Green Bay
University of Wisconsin - La Crosse
University of Wisconsin - Madison
University of Wisconsin - Stevens Point
University of Wisconsin - River Falls
University of Wisconsin - Platteville
University of Wisconsin - Whitewater
University of Wisconsin - Stout
University of Wyoming
Mass, group, and individual methods of instruction are the three traditional modes in use by Extension workers. Mass instruction is usually provided by radio, TV, and newspaper; group is usually provided in meetings or courses. This questionnaire is concerned with the topic of individual instruction in Cooperative Extension work.

INDIVIDUAL INSTRUCTION is one-to-one teaching. It often occurs during the farm and home visit, the office visit, the telephone call and by individual letter. It is frequently reported as "personal contacts."

Please encircle an appropriate number indicative of your opinion on each statement below as follows. A indicates agree and D indicates disagree: 1=very slight, 2=slight, 3=moderate, 4=strong, 5=very strong. If you are undecided or have no opinion, circle both A and D for that item. Please respond in relation to your total program.

Examples of responses:

A 1 2 3 4 5 indicates slight agreement with the statement.
D 1 2 3 4 5 indicates strong disagreement.
A 1 2 3 4 5 indicates no opinion.

A 1 2 3 4 5  1. People in my county generally prefer group instruction instead of individual instruction.
D 1 2 3 4 5

A 1 2 3 4 5  2. I give consideration to individual instruction when setting program objectives.
D 1 2 3 4 5

A 1 2 3 4 5  3. I give specific attention to individual instruction when designing the program strategy for my county.
D 1 2 3 4 5

A 1 2 3 4 5  4. Farm and home visits remain an important program implementation procedure in my county.
D 1 2 3 4 5

A 1 2 3 4 5  5. I find it difficult to evaluate the impact of individual instruction.
D 1 2 3 4 5

A 1 2 3 4 5  6. Extension should provide personal counseling for individual clients who need it.
D 1 2 3 4 5

A 1 2 3 4 5  7. As the number of independent farmers decreases, individual instruction becomes less important as a means of meeting program objectives.
D 1 2 3 4 5

A 1 2 3 4 5  8. Individual instruction is as appropriate for program strategy in modern settings as it was in past years.
9. Individual instruction is a primary educational method of implementing the Cooperative Extension program.

10. My time is spent more effectively when writing a news article than when conducting individual instruction.

11. Extension education is an area which has a continuous need for individual instruction.

12. In meeting program objectives, Extension philosophy appears to place emphasis on teaching methods other than individual instruction.

13. Individual instruction is an appropriate strategy for reaching disadvantaged persons.

14. I spend less time implementing the Extension program through individual instruction than I do on mass instruction.

15. My time is used more effectively at meetings than in providing individual instruction.

16. Urban Extension has less need for individual instruction than rural Extension.

17. Individual instruction definitely should be considered when formulating program objectives.

18. Individual instruction is an appropriate strategy for reaching innovators.

19. My Area Director prefers that I emphasize other instructional methods rather than individual instruction in program execution.

20. Individual instruction is an effective way to change behavior.

21. People in my county need individual instruction.

22. The individual instruction method has a distinct place in the formulation of program objectives in my county.

23. Individual instruction is an appropriate strategy for reaching community leaders.

24. I spend less time implementing the Extension program through individual instruction than I do on group instruction.

25. I feel a sense of accomplishment when I provide individual instruction.
(Optional)

26. Please describe briefly your feelings about the use of individual instruction in Extension education.
Teaching method is always a fascinating topic in extension work. We think that recent research in method has begun to lag. Accordingly, we are trying to energize this important area.

As you will note in the enclosed questionnaire, we are attempting to explore certain dimensions of individual instruction as you see them. We know that questionnaires are not always a popular way to obtain research information, but this one is fairly short.

We are convinced that research on our profession has ultimate merit and we hope we can count on you to complete the enclosed questionnaire and return it to us with minimal delay.

Sincerely yours,

Roger L. Lawrence
Coordinator of Extension Personnel Training

Enclosure
Questionnaire
November 24, 1975

As you know we are attempting to do research on the topic of individual instruction in extension work. Perhaps you have mislaid our request or had other things to do.

During these busy days, we know it is easy to put another questionnaire aside and hope it will go away. But we are convinced that research is important in our work or we would not have undertaken this project. The most feasible way to obtain the data for the research topic at this time is through the enclosed form.

Won't you take a few minutes and help us to get more complete data? Of course, the returns are confidential and are used in statistical analysis only.

Sincerely yours,

Roger L. Lawrence
Coordinator of Extension Personnel Training

Enclosure
Questionnaire
HELP ! HELP ! HELP !

We need yours in order to have more complete data in the research on the individual instruction method now in progress. As you recall, we are asking all Extension Directors in Iowa to complete a short questionnaire on the subject.

True, repeated requests to fill our questionnaires can be exasperating, but that's the way progress is made at this state of the art. At this point, we need your cooperation. We would not have undertaken this research if we were not convinced of its value.

Please disregard this letter if you have already mailed your questionnaire form to us. Otherwise, can't you please take a few minutes to give us some HELP?

Many thanks !

Sincerely yours,

Roger L. Lawrence
Coordinator of Extension Personnel Training

Enclosure
Questionnaire
Background

This survey was a result of curiosity about the status of direct, individual instruction in general extension at the university level. It grew out of interest in the larger topic of individual instruction in extension education. The observation was made that individual instruction and individualized forms are currently of considerable interest in other areas of education. Is this also the case in extension?

General university extension appears to have originated as a predominately group form with strong emphasis on the lecture technique. Conferences, institutes and other group forms are highly developed. However, general extension has also long demonstrated an interest in the individual learner usually through the correspondence course and more recently through instructional technology and combined forms.

Individual instruction is itself a complex phenomenon closely associated with independent study, adult counseling, private consultation, etc. It appears possible to differentiate between individualized and individual instruction -- the latter may be conceptualized minimally into direct and indirect modes. Direct was defined for this study as face-to-face instruction such as the private tutorial. Indirect was defined as mediated by some means additional to the instructor, including distance instruction. It is evident that the indirect mode has a long association with general extension as a legitimate method. But what about the direct mode?

The diversity of the general university extension enterprise is also a complicating factor. Many adult divisions, evening divisions and continuing education divisions are essentially of an extension character. Moreover, some extension instruction is now likely to take place on campus; extension is no longer limited to geographical extension. The evidence suggests that there may be a great deal of variability between universities on what constitutes general extension.

The problem now becomes one of designing a survey instrument which is reliable, sensitive, valid and communicative to probe a complex instructional mode under highly variable institutional conditions. This presented a task of considerable challenge.

Procedure

A literature search failed to reveal any previous research on the specific topic of direct, individual instruction in general university extension.

A survey form was prepared which attempted to probe nine items related to some facet of direct, individual instruction: primary form, adjunct form, total availability, course offerings, subject areas, self-directed learner, student need, instructor interest, and future use. Each item provided for five levels of response such as high, moderate, low, very low and none. These were set up for formal hypothesis testing using the Chi Square analysis.
A tenth item on the survey form invited comments on the phenomenon and asked for specific examples.

A total of 218 forms were mailed to universities believed to have an interest in general extension. Addresses were obtained from the Higher Education Directory 1974-75, National Center for Education Statistics, NCES 75-119. Two reminder letters were mailed to non-responding institutions. Last date for accepting returns for processing was December 30, 1975.

Findings

Response rate = 87.6%. A total of 27 institutions did not respond before the closing date. A total of 184 forms were used in the statistical analysis; 7 forms were not completed for reasons such as no extension courses offered, no recent courses in extension, etc.

For all 9 items, the null hypothesis of equal response in each category (i.e., proportion of response being the same) was rejected. All Chi Square values were significant at the .001 level of confidence with 4 degrees of freedom. The result of the test that the proportion of responses is not the same is taken to imply that the responses are not arbitrary.

The percentage of responses obtained in each category for the nine items are given below, rounded to one decimal.

1. Extent of offering direct mode as a primary form: High 13%, Moderate 4.4%, Low 15.2%, Very Low 37%, None 30.4%.

2. Extent of offering direct mode as adjunct form: High 1.6%, Moderate 16.4%, Low 29%, Very Low 37.1%, None 15.9%.

3. Estimate of total availability of direct mode: High 10.4%, Moderate 12%, Low 25.7%, Very Low 41.5%, None 10.4%.

4. Extent of availability relative to course offerings: In Most 9.9%, In Half 6.5%, In Several 19.8%, Very Few 44%, None 19.8%.

5. Extent of availability relative to subject areas: In Most 9.3%, In Half 8.2%, In Several 17.6%, Very Few 47.3%, None 17.6%.

6. Amount of effort made to assist self-directed learner: High 3.9%, Moderate 28.3%, Low 22.6%, Very Low 32.2%, None 13%.

7. Characterization of student need for direct mode: High 12.8%, Moderate 39.5%, Low 24.4%, Very Low 20.4%, None 2.9%.

8. Estimation of instructor interest in providing direct mode: High 12.1%, Moderate 26.5%, Low 27.1%, Very Low 28.9%, None 5.4%.

9. Anticipation of future use of direct mode: Considerably More 9%, More 34.3%, Same 48.9%, Less 1.1%, None 6.7%.
Item 10: Number of institutions providing substantive responses = 81.

Number of institutions providing specific examples = 42.

Number of specific examples of use of direct, individual instruction = 51. (Some institutions listed more than one example.)

Comment

The elusive nature of individual instruction and the differences in extension models suggest limitations of this type of survey research. Results must be interpreted as tentative. The following assertions appear reasonable, based on the survey findings.

The use of the direct mode of individual instruction is very low to none as a primary form and very low to low as an adjunct form. The total availability is very low with very few course offerings in very few subject areas. Attention to the self-directed learner is very low to moderate and low. Student need for this mode was assessed as moderate to low and very low. Instructor interest was reported as very low to low or moderate. Most institutions anticipate no change in the future use of this mode, with the next largest category expecting more use.

Specific examples of the use of the direct mode were usually made relative to teaching method, special programs, adult counseling, and subject-matter areas. Several institutions mentioned the prohibitive cost/expense of this mode and a few noted the viability of the indirect mode at their university.

The impression is gained that individual adult counseling and extension library service to the individual might be fruitful topics for further research in this area.
Dear Colleague:

As you will recall, a study of direct, individual instruction in extension education was recently conducted in the Adult and Extension Section of our College of Education.

We wish to acknowledge your participation in the survey portion of the study and express our sincere thanks for your help. The purpose of the survey was an attempt to explore direct instruction to the individual in general university extension.

Participants were given an opportunity to indicate on the survey form whether or not they wished to receive a synopsis of the findings. Accordingly, the enclosed report includes a brief description of background and procedure, findings and a comment.

Although results of a survey of this nature must be interpreted with caution, perhaps a first step has been taken in gathering information on this phenomenon in the important area of general university extension.

Again, thank you for your cooperation.

Sincerely yours,

Charles E. Donhowe
Dean

Enclosure
Synopsis
RESEARCH REPORT ON INDIVIDUAL INSTRUCTION

Background

Other areas of education appear to be displaying an increased interest in the topic of individual instruction and individualized forms. This research project was undertaken in an effort to determine if such interest also exists in extension education.

Exploratory research in university extension must be prefaced by a consideration of historical indicators. It would appear that the Cooperative Extension Service has had an interest in individual instruction since its inception, largely through the farm visit and later the office visit. One-to-one instruction appears to have been a relatively vigorous method in times past. Some reports appear to reflect enthusiasm by the practitioner for providing outreach education to the individual wherever he is.

But is this also the case today? Times, in fact, have changed. New technology facilitates mass instruction and makes it easier to bring people together into groups. Perhaps the individual method is outdated, neutralized by familiarity, or simply losing ground to new concepts such as community action, group dynamics, and the like. What do Extension Directors think about the individual form today?

Method

A literature search was conducted to determine if any previous research was available on the specific topic of opinion analysis about individual instruction in Extension work. No such studies were found.

Five commonly recognized phases of program development in Cooperative Extension were delineated: need assessment, determining objectives, designing strategy, implementation, and evaluation. To insure spread, five questionnaire items were prepared in relation to each of these phases.

Iowa County Extension Directors were invited to participate in the project by indicating agreement, disagreement (at five possible levels of intensity) or no opinion on each item of the questionnaire. Items 1, 6, 11, 16, and 21 related to need assessment; 2, 7, 12, 17, and 22 to determining program objectives; 3, 8, 13, 18, and 23 to designing program strategy; 4, 9, 14, 19, and 24 to program implementation; 5, 10, 15, 20, and 25 to program evaluation. A final item, 26, asked for a brief description of feelings about individual instruction.
Results

Response rate = 100%. A total of 99 forms were used in statistical analysis; one respondent stated he had insufficient field experience to participate at this time.

Below is a report of the responses to each statement in the questionnaire along with an indication whether or not there was agreement with the statement and the degree of such agreement or disagreement.

Significance at the .05, .01, and .001 levels of confidence for the z test are designated here as significant, very significant and highly significant, respectively. Items and results are shown below.

1. People in my county generally prefer group instruction instead of individual instruction. Disagree, very significant.

2. I give consideration to individual instruction when setting program objectives. Agree, very significant.

3. I give specific attention to individual instruction when designing program strategy for my county. Agree, very significant.

4. Farm and home visits remain an important program implementation procedure in my county. Agree, very significant.

5. I find it difficult to evaluate the impact of individual instruction. No opinion.

6. Extension should provide personal counseling for individual clients who need it. Agree, highly significant.

7. As the number of independent farmers decreases, individual instruction becomes less important as a means of meeting program objectives. Disagree, highly significant.

8. Individual instruction is as appropriate for program strategy in modern settings as it was in past years. Agree, highly significant.

9. Individual instruction is a primary educational method of implementing the Cooperative Extension program. Agree, significant.

10. My time is spent more effectively when writing a news article than when conducting individual instruction. Disagree, very significant.

11. Extension education is an area which has a continuous need for individual instruction. Agree, highly significant.
12. In meeting program objectives, Extension philosophy appears to place emphasis on teaching methods other than individual instruction. Agree, very significant.

13. Individual instruction is an appropriate strategy for reaching disadvantaged persons. Agree, highly significant.

14. I spend less time implementing the Extension program through individual instruction than I do on mass instruction. No opinion.

15. My time is used more effectively at meetings than in providing individual instruction. No opinion.

16. Urban Extension has less need for individual instruction than rural Extension. Disagree, highly significant.

17. Individual instruction definitely should be considered when formulating program objectives. Agree, highly significant.

18. Individual instruction is an appropriate strategy for reaching innovators. Agree, highly significant.

19. My Area Director prefers that I emphasize other instructional methods rather than individual instruction in program execution. No opinion.

20. Individual instruction is an effective way to change behavior. Agree, highly significant.

21. People in my county need individual instruction. Agree, highly significant.

22. The individual instruction method has a distinct place in the formulation of program objectives in my county. Agree, highly significant.

23. Individual instruction is an appropriate strategy for reaching community leaders. Agree, highly significant.

24. I spend less time implementing the Extension program through individual instruction than I do on group instruction. No opinion.

25. I feel a sense of accomplishment when I provide individual instruction. Agree, highly significant.

26. The 91 individual comments listed are under further study.
Interpretation

Limitations of questionnaire analysis of this type suggest discretion in the interpretation of results. As measured by this instrument, results tend to indicate that significant opinion does exist among County Extension Directors in Iowa relative to those items associated with need, objectives and strategy — but not necessarily relative to those items associated with program implementation and evaluation.

The utility and role of the individual method appear to be cast in a somewhat favorable light as suggested by responses to some items. Extension Directors appear not to be indifferent to the individual method. The high response rate and relatively large number of responses to the open ended question seem to corroborate this view.
March 1, 1976

Dear Co-Worker:

This is to thank you for participating in our recent research project on the topic of individual instruction in Extension. This is part of a study by Lloyd Wade, a Ph.D. candidate.

The questionnaire which you returned was an effort to probe the current opinion of the individual method in Extension work.

I realize that it is sometimes difficult to respond to prepared questions of this type in relation to your own program. However, the high response rate was very gratifying as were the many thoughtful comments on the phenomenon under study.

The short compendium which is enclosed was developed from the data for your information by Lloyd Wade.

Your assistance in this project is appreciated.

Sincerely yours,

Roger L. Lawrence
Coordinator of Extension
Personnel Training

Enclosure
Compendium