The development and field test of a methodology for the dissemination of innovations.

William A. Welsh
University of Massachusetts Amherst

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THE DEVELOPMENT AND FIELD TESTING OF A METHODOLOGY
FOR THE DISSEMINATION OF INNOVATIONS

A Dissertation Presented

By

WILLIAM A. WELSH

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
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Education
THE DEVELOPMENT AND FIELD TEST OF A METHODOLOGY
FOR THE DISSEMINATION OF INNOVATIONS

A Dissertation Presented

By

WILLIAM A. WELSH

Approved as to style and content by:

Dr. William C. Wolf, Jr., Chairperson of Committee

Dr. Ronald K. Hambleton, Committee Member

Dr. Thomas E. Hutchinson, Committee Member

Dr. D. Anthony Butterfield, Committee Member

Dr. Grace J. Craig, Acting Dean of the School of Education
University of Massachusetts
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The Development and Field Test of a Methodology for the Dissemination of Innovations

William A. Welsh
University of Massachusetts

Abstract
One of the relatively few things in education about which there appears to be general agreement is that educational change does not occur in anything like an orderly, systematic way. There are a number of possible explanations, and certainly the virtual absence of systematic needs assessments and the inability of educators to agree with some consistency on what is "best" are important factors.

Also another important explanation is that innovations -- be they products in the traditional sense or research-based knowledge -- are not systematically disseminated to appropriate practitioners (e.g., local school districts). There is a need for a stronger link between the producers of researched-based knowledge and its potential consumers. Moreover, one of the main reasons for the general ineffectiveness of dissemination efforts thus far is the absence of a systematic methodology for the dissemination of educational innovations.

The subject of this work was the development field testing of a systematic, operational methodology for the dissemination of innovations. "Operational" is a key term. As defined in this paper, a methodology is completely operational when two persons, applying the methodology independently, do exactly the same thing. Operational
methodologies, it is felt, are much easier to revise on the basis of field test data than are general models. This follows because problem areas are far easier to pinpoint accurately. This dissemination methodology was developed using "Methamethodology," developed by Dr. Thomas Hutchinson of the University of Massachusetts School of Education.

The stated purpose of the methodology is: **to meet needs through the dissemination of products.** Steps in the methodology include: the planning of its application, product design and adaptation, determination of appropriate target groups, identification of innovators and opinion leaders within those groups, use of early adopters' help with subsequent dissemination, evaluation of the impact of the innovation (or the reason for its rejection), and evaluation of the effectiveness of the overall dissemination effort.

The methodology was field tested during the 1974-1975 academic year with the Clinic to Improve University Teaching, University of Massachusetts School of Education. The Clinic's teaching improvement process was the innovation to be disseminated. The major purpose of the field test was not to prove once and for all the value (or lack of value) of the methodology, but rather to uncover any problems, gaps, and weaknesses that might (and, of course, did) exist. An object also was to use the field test to make the methodology as operational as possible; of course, it will take years and repeated applications to render it thoroughly operational.
The methodology is seen as having educational significance in two respects. First, it will provide the base for situation-specific diffusion strategies that Guba has suggested is needed. Secondly, if the methodology gains acceptance in the educational community, it could lead to a significant increase in numbers working as "linkage agents"; The methodology would provide for them a visible framework for performing their duties, something which has up to now been missing.
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Chapter I

Introduction

1.1 Background

A process of considerable interest to many people in a variety of disciplines, including education, is that of systematic change. To this writer, the elements of systematic change seem to include, ideally (1) the systematic generation of knowledge through rigorous research; (2) the production of new products, processes, and concepts on the basis of clearly recognized and defined needs, accomplished in accordance with new knowledge generated; (3) the dissemination of these new products, processes, and concepts to persons and groups needing them, through the channels and in the form that best insures they will be used and useful; and, (4) the impact of these new products, processes, and concepts is systematically evaluated. This ideal is not often realized.

Clearly, systematic change is preferable to unsystematic change. Yet, for various reasons, this goal has been difficult to achieve. Some fields, such as medical research and much of the research in physical sciences and related disciplines, have done relatively well in this regard. In the social sciences -- e.g., sociology, education psychology, etc., -- the record is not as good.

One of the relatively few things in education about which there is general agreement is that change in education does not occur in anything
like an orderly systematic way. Changes are all too often made in schools because someone with charisma convinces a school board; because some department head has a good idea and is able to convince the right people of its worth; because other schools in the area are doing it and it is getting a lot of publicity; and for many other reasons such as these, most of which are at least partially valid. Only occasionally are changes made because a real needs assessment is done and there is a search for a product that will fill that need.

This lack of systematic change constitutes an important problem, one for which there are a wide variety of explanations. A large part of the problem may be due to the fact that educators cannot consistently agree on what is "best", even in particular, well-specified situations, and this makes systematic progress more difficult. Other reasons include the relative infrequency of systematic needs assessments in the schools, a situation that thwarts educational product developers' efforts to know what to develop and school personnel to know which products to use. Another reason appears to be the virtual absence of systematic communication of educational innovations for producer to consumer.

1.2 Evidence of Problems in the Educational Communication Network

The fact is that the components of the educational communication network are ineffective in assisting a systematic change. Their purposes are typically much narrower than "to assist in bringing about systematic change."

Wolf (1973) notes that the educational communication network is a rather disorganized hodgepodge of workshops, training sessions,
journals, consultants, etc., almost totally ineffective in bringing about any systematic change. This ineffectiveness he attributes to the following reasons:

The field lacks enough reliable knowledge producers; interpreters of this knowledge usually prove to be graduate students who have other competing concerns; marketing strategies seldom are seriously cogitated, and information storage and retrieval is in a primitive state. No well-defined and respected communication channel exists to effectively diffuse innovations to appropriate target audiences. A cadre of diffusion agents functioning at the grass roots level is absent. And, practitioners are accustomed to adopting innovations without benefit of evidence and without clear-cut comprehension of their implementation. These statements, taken together, account for the chaotic state of innovations diffusion and utilization in the field. p.24

Paul Hood (1973) adds that there are serious problems in communicating ideas within the field of education and points out that there is no guiding theory in this area; there is little or nothing that tells us how to communicate new ideas:

Currently, the situation with respect to both research and development on R & D -- Practice Improvement communication is a 'messy' one . . . this particular R & D area still lacks a significant, organizing conceptual base. The relevant validated knowledge base is insufficient to guide responsible policy making for wise investment in major programs for R & D communication. There is a dearth of applied experimental research.

The relative lack of theory is a serious problem; another weakness in the educational communication field appears to be the failure of the community to apply what theory does exist to their practices. Brickell (1972) states: "... school practice in this nation cannot be understood as based primarily upon research. Virtually
none of the present predominant practices, e.g., length of the day, nature of the curriculum, training patterns of teachers, have any foundation in research finding."

There seems to be little doubt that the education community has had difficulty, and continues to have difficulty, in translating theory into practice. There seems to be little doubt as well that at least an important part of the problem is the difficulty knowledge producers (i.e., researchers) have had in communicating the results of their work to practitioners to whom it could actually be of use and in usable form. It is, at least, apparent to those who have made a careful study of the situation.

A word of clarification of the term "dissemination" is in order here. As defined in this study, to disseminate is to present a product to a target population in such a way that maximizes its probability of being adopted. It does little good to simply "spread the word"; knowledge does not necessarily lead to adoption, in fact it very often does not. It is important to present the product to the population in such a way that it is most likely to be used.

Unfortunately, there are too few people interested enough in dissemination problems or who see dissemination as a problem, and this acts as a barrier to progress. Havelock (1969) recognizes the difficulty:

In reality, knowledge utilization is at best a crude art occupying the undivided attention of only a small scattering of scholars in three or four centers of learning. There are no schools, no curricula, and few courses for training researchers in this area, and there is as yet only a dim awareness on the part of the nation as a whole that this field deserve extensive public support.
It appears that dissemination is one of those areas in education in which a great many people consider themselves expert, much the same as many non-experts consider themselves knowledgeable in research and evaluation. Even further, as Guba (1972) notes, "diffusion is an activity regarded with distaste by many members of the educational establishment, particularly the research community."

This does not, however, make dissemination any less a problem; indeed, it intensifies the problem, as educators continue to employ dissemination techniques that simply, by themselves, do not do the job. A few case studies will provide a better view of the track record of current dissemination techniques.

Paul Leary (1970) reported the outcome of a study of the effectiveness of nine faculty in-service training institutes: eight were Kettering Foundation IDEA seminars, four during the summer of 1967, and four during the summer of 1968; also included was a University of Massachusetts flexible scheduling conference, held July 8-12, 1968. Participants were asked by means of questionnaire, whether or not they perceived the conference as: (1) sources of information about educational innovations of interest and (2) sources of information contributing to the actual adoption of innovations at their school.

Questioned six months after their participation in the conference, twenty-nine per cent of the participants (total N=1800) perceived these programs as a source of information about education innovations of interest, and eleven per cent saw them as a source of information contributing to the actual adoption of innovations.
In addition, participants were asked at the conclusion of formal activities whether the conferences heightened their aspirations for innovation. Of those who responded positively, approximately thirty-one per cent saw the conference as a source of information about educational innovations of interest. When asked about this six months later, only approximately ten per cent perceived the conference as somehow contributing to the adoption of an innovation. For ninety per cent of this group -- whose interest in innovations was likely greater than the educational community as a whole -- the conference contributed nothing with regard to the adoption of an innovation; certainly this does not say much for these workshops as effective in securing the adoption of innovations by target audiences. They were, perhaps, moderately effective as sources of information. The innovations were, however, apparently not presented in such a way as to maximize their adoption rate.

Crawford, Kratochvil, and Wright (1972) identified 117 products seen as having a "significant impact". "Significant impact" is defined in the following ways: (1) the products must be in use by at least five schools that are not connected with the product developer; (2) their intended target population must be at least one-quarter of the United States school population at the appropriate age or grade level; (3) they must have come into use in the last five years; and (4) they must either have produced results suggesting a reasonable gain towards an accepted educational goal, or they must have contributed to better school organizational efficiency, classroom climate or operational
learning procedures or methodology, or improved perceptual-motor skills.

These 117 products, then, have considerable potential importance, and they were all given considerable exposure. Each was provided exposure through at least two traditional sources (journals, workshops, training institutes, etc.); 46% were disseminated in 2-5 sources; 28% in 6-9 sources; and 26% in more than ten sources. Given that these are products of some substance, and that they have received much of the traditional kinds of exposure, one might expect that, if the traditional dissemination methods are effective, their use would be widespread.

In fact, an extremely limited number of schools have adopted these innovations. Almost half of the products are used in 100 schools or less, nationally, and only 21.5% were in use in over 500 schools, and even 500 schools seems a pathetically small number considering the national scope of this study. Obviously, traditional techniques designed to create awareness of innovations are of very limited effectiveness with regard to getting innovations adopted.

A 1969 report of the United States Office of Education entitled Educational Research and Development in the United States describes results similar to the study described above. The report states, "The overwhelming majority of students get no exposure to most of the newer teaching practices . . . More than half of the 33,731,000 students included in our population got no exposure to thirteen of the seventeen specified in the project's questionnaire innovations."
A comprehensive study was conducted by Wolf and Fiorino (1966), under the auspices of the Kettering Foundation, to test the efficacy of traditional dissemination tools (i.e., journals designed to be read by practitioners, brief workshops, and extended training sessions.) Journals included Elementary English, National Elementary Principal, School Science and Mathematics, The Instructor, and Saturday Review of Literature. Brief meetings included meeting of the Association for Supervision and Curriculum Development, the National Association of Elementary School Principals, the Association for Childhood Education, the International Reading Association, and a number of ASDC sponsored regional institutes in Denver, Detroit, Minneapolis, and Washington, D.C. Extended assemblages included NDEA summer institutes at the University of Virginia (English), Middlebury (in English), Howard University (Reading), Albright College (German), and NDEA academic year institutes at the University of Georgia (Guidance and Counseling), University of Buffalo (Guidance and Counseling), Bank State College (Cultural Deprivation), and New York University (Cultural Deprivation).

The researchers obtained lists of those who had subscribed to the various journals and who attended the various conferences; they were eventually able to collect data on a random sample of 595 people. If there was any bias in the sample, it was probably in the direction of innovativeness.

Of the 595 subjects interviewed, 414 were connected with the adoption of at least one innovation in their schools, 143 with at least
two innovations, and 42 with at least three. Of great importance was the fact that only six per cent of those interviewed related the innovations they were instrumental in seeing adopted to the conference they had attended or the journal they were known to have subscribed to. The authors concluded:

Since changes tend to occur on the periphery of pedagogical practice; since models of educational change suggest by-gosh-by-golly behavior rather than disciplined inquiry; and since selected popular purveyors of innovative practices, products, and ideas exert little influence upon the adoption behavior of the individuals engrossed in educational change, one can understand how the conventional wisdom changes gradually in the hands of educational insiders.

Today's practitioner seems driven toward change for the sake of change. Often he lacks knowledge of prior educational practice, and he certainly doesn't employ disciplined inquiry techniques. What has resulted from his efforts is hardly an improvement upon the style of the middle-aged metal worker. If anything, his evaluation capabilities are inferior to those of the artisan. [pp. 83-4]

It has not been the intention in this section to imply that journals, workshops, and institutes are of no use as dissemination tools; they have their place, of course. It must be recognized, however, that they represent, at best, components in what must be a much broader strategy for the dissemination of innovations. Meanwhile, many educators recognize there appears the need for better ways to disseminate educational innovations to targeted audiences.

1.3 The Need for a Systematic Method for Disseminating Innovations.

The need for a method of communicating innovations has been pointed out by Guba (1974) among others. He has stated:
I come then to the conclusion that the particular path that has been suggested in the literature for the determination of diffusion strategies and tactics is not especially fruitful... Theories thus far propounded do not afford a means by which a specific diffusion strategy appropriate to a given situation can be developed. We are, in this connection, no more advanced than the examples set for us by master practitioners such as Henry M. Brickell can take us. I conclude that there is no practical way to generate diffusion strategies and tactics known to us now. [p. 9] 

He adds that this ineffective dissemination technique makes linkage between researchers in the "ivory tower" and educational practitioners impossible.

He goes on to say: "In our struggle to upgrade education in the post-Sputnik era, it is clear that the schools have not taken full advantage of the knowledge produced by educational research."

In 1964, the Systems Development Corporation conducted a series of traveling seminars for groups of approximately thirty educators each, who visited schools around the country. They had identified these schools as innovative. Among the most important of their conclusions were:

1. Schools have no system for structured, planned change.
2. Although useful, the literature, conferences, workshops, etc., are considered inadequate for dissemination.
3. "The 25- or 50-year lag or gap, perhaps a little less now, in 1974 between research and implementation is attributed to a failure to take effectively the next step(s) of demonstration, dissemination, Implementation, and evaluation."

Their report goes on to state that the research scientist has the
responsibility "to make his results broadly known, and to communicate in a form which is readily accepted by practitioners."

The research scientist, however, does not typically have effective dissemination skills, and in the absence of an effective dissemination methodology, effective communication of this variety will be rare.

Some of the literature -- which will be cited in the following chapters -- provides useful clues as to how some ideas should be disseminated. But there is nothing written to date, in operational terms, detailing how new ideas and products can be disseminated to potential users of these ideas and products. There is a critical need for just this process in education.

As a matter of fact, there is a need for this in many fields in addition to education. Rogers and Shoemaker's (1971) extensive review of the diffusion literature in education, sociology, marketing, anthropology, and numerous other disciplines turned up no step by step methodologies for communicating new ideas, and it seems reasonable to assume that if one did exist, it would be reported somewhere. Perhaps such methodologies do exist as closely guarded industrial secrets in the world of business, where millions of dollars hang in the balance. But they are not readily available to the general public, and even if they were, there is at least some question about their effectiveness. Consider, in this regard, how few products introduced each year last more than one year, and how much money is spent on products that do not make it. If marketing methods are so well-developed, how is this phenomenon accounted for?
Essentially, then, it is clear that a viable methodology for the disseminating of innovations that will meet needs has yet to evolve; it is equally clear that one is needed.

1.4 Purposes

It can be assumed, then, that the field of education -- and a great many other areas -- are lacking comprehensive systems of communicating new ideas from producers to practitioners. The primary purpose of this work was to develop a methodology for the dissemination of educational products in order to meet needs.

A second purpose of the study was to field test, evaluate, and, where appropriate, redesign the methodology. The test was conducted at the Clinic to Improve University Teaching, School of Education, University of Massachusetts at Amherst. The Clinic, supported by a three-year grant from the W. K. Kellogg Foundation, was committed in its third year of operation to disseminate its teaching improvement model to other instructional development agencies.

It was not one of the purposes of this paper to formally field test metamethodology. Metamethodology was, as noted previously, used to build the dissemination methodology. However, use of the steps was not systematically documented, nor were any changes in metamethodology recommended.

1.5 Limitations of the Study

The degree of success of the methodology in this field test may
have been partially due to the nature of the product disseminated, i.e., the Clinic's teacher improvement process. Some effort was made to determine the effect of the product but it was exceedingly difficult to determine. Only subsequent field tests will show fully the dependence of the methodology on the nature of the product.

The finished methodology is not truly "completed" in one sense. An operational methodology such as the one proposed is almost never "completed", since every application is a field test, and will typically result in some modifications.

It should be noted, in addition, that such a methodology is not for everybody. As it now stands, dissemination is much more an art than it is a science, and the field has its artists, so to speak. There are some individuals who, by intuition, charisma, force of personality, or some other characteristic or combination of characteristics, are very effective disseminators. These individuals do not need a methodology. In fact, following a methodology would almost certainly reduce their effectiveness. The methodology is intended for the vast majority of people who do not have these unique talents.

1.6 Educational Significance of the Study

A systematic methodology for disseminating innovations would improve the general field of dissemination in a number of ways. First, it would provide a means by which product developers can effectively disseminate their product to appropriate potential consumers. The methodology is intended to provide the base for generation of situation-
specific diffusion strategies and tactics that Guba (1974) has suggested is needed.

Secondly, and perhaps more importantly, there is some chance that the existence of a credible, reasonably effective dissemination methodology could lead to an increase in the number of diffusion agents functioning at the "grass roots" level. Relatively few persons in education are engaged primarily in diffusion/dissemination, and it seems that a large part of the problem is that there is little, if any, agreement about the responsibilities of a diffusion agent. Certainly it is a reasonable hypothesis that if there exists an effective dissemination methodology, and if it gains some acceptance in the educational community, more agencies will be willing to pay individuals to engage in dissemination activities.

If, in fact, the cadre of diffusion agents does grow up, and they do have a systematic methodology to help them in their work, it may well alleviate one of the lack of a "well-defined and respected communication channel to effectively diffuse innovations to appropriate target audiences."

Carrying the argument further, it seems apparent that a group of diffusion agents, working through a systematic methodology, may help develop well-defined and respected communication channels by the very performance of their jobs. Part of the task of the methodology would be to define the most effective channels of communication, more precisely with each field test and revision of the methodology. By using these channels, diffusion agents will accustom both knowledge
producers and users to their existence and use, making them increasingly well-defined and respected.

All of this is related to the more general issue of systematic change in education, as systematic change is dependent on the orderly and regular conduct of research, development, dissemination, and evaluation. Further, it can be argued that dissemination is the least well developed of the four components.

There is much current concern with research design; the literature is replete with papers that deal with problems and issues related to research methodology. Product developers -- as "product" is defined in this proposal -- exist in great numbers, be they researchers working at producing knowledge and ideas, businesses working at producing hardware for use in schools, or any of a variety of other types of product developers. Further, there is much interest, and much work being done, in evaluation. A number of evaluation models have been developed (Stufflebeam, et. al., 1971), Provus Discrepancy model, (see Provus, 1969, etc.), and a systematic, operational methodology has been developed by Hutchinson et. al., (1975). The literature deals extensively with problems in all aspects of evaluation.

Many dissemination problems have received, and continue to receive, less attention. Dissemination is much less a science than research, development or evaluation (although few would deny that there is much room for improvement in these areas, also.) If the methodology proposed in this dissertation makes dissemination more of a science and less of an art -- and this is its most basic purpose --
then it will represent a very important step toward systematic change in education.

1.7 Definition of Terms

Dissemination -- Presentation of a product to a target population in such a way as to maximize its probability of being adopted and used on a continuing basis.

Methodology -- A systematic, standardized, operationalized set of rules and procedures designed to accomplish a given purpose.

Need -- The discrepancy between the ideal and the real for a person or group. The lack of a product, process, or idea that makes the ideal somehow less than the real.

Product -- Any piece of "hardware", process or idea capable of meeting a need for a designated target population.
Chapter II

Methodologies and Metamethodology

2.1 Methodology

The term methodology can be defined in a great many ways. The definition adopted in this study is that of Dr. Thomas Hutchinson (1972): an operationalized, systematized, standardized, set of rules and procedures designed to achieve a defined purpose.

By operationalized is meant that the rules and procedures are stated with sufficient specificity that all people would have the same understanding of what they direct the person to do, i.e., they are stated in behavioral terms. By systematized is meant that there is a logical reason for the inclusion, and placement in sequence, of each rule. By standardized is meant that each individual using a given methodology will use the same set of rules and procedures.

A methodology having these properties has a number of advantages over those that do not. It is easier for an individual who does not have a great deal of expertise and experience in the area to apply because it is typically far more specific and prescriptive. Secondly, if there are problems in its application, it is far easier to pinpoint them because of the specificity of the steps.

Thirdly, it is easier to test and revise such a methodology. It is much harder to refine a general methodology, because specific rules and procedures within that method can differ substantially with different applications. For the above reasons, the methodology con-
structured will be a systematic, operational, standardized, dissemination methodology rather than one that is more general.

2.2 Metamethodology

Metamethodology is a tool designed for those who wish to build a methodology designed to accomplish some specific purpose. It was originated by Hutchinson in 1971, and has subsequently been used in the construction of methodologies in the areas of evaluation, needs analysis, knowledge generation (research design), and other areas.

Metamethodology is only one way to build a methodology. No claim of exclusivity is made whatsoever; the only claim made is that it is a tool that has worked reasonably well in a number of similar areas.

It is a fact, though, that there were no systematized, standardized, operationalized methodologies in evaluation, research design, or needs analysis prior to 1971, and those in existence were constructed using metamethodology. There is still no such methodology for dissemination.

Because metamethodology provides a step-by-step procedure, and because it has been used with reasonable success in several varied problem situations, it was chosen as the tool with which a dissemination methodology would be constructed.

There are eight basic steps in metamethodology. A brief summary of the steps follows. Draft VIII of the steps prepared by Hutchinson and his colleagues is included in Appendix II.

Step one directs the user to learn metamethodology properly before applying it, e.g., by taking a course and reading appropriate materials.
It also provides for allocating the user's resources among the remaining steps.

Step two simply involves choosing a problem to work on. Nearly all the time this will be no problem at all; the user will work in his/her area of interest. If this is a problem, however, more elaborate procedures are provided.

Step three involves choosing a purpose for the methodology (e.g., to meet needs through the dissemination of products), and making sure the purpose is non-trivial.

Step four involves checking four different areas: (1) the sufficiency or insufficiency of existing methodologies having the same purpose; (2) the practicability of the purpose; (3) the desirability of the purpose; and (4) the operationalizability of the purpose (i.e., can it be reduced to specifics sufficiently so that it can be accurately understood by most people).

Step five provides procedures for choosing and ordering the major elements of the methodology.

Step six directs the user to actually operationalize the purpose. This often results in a change in the major elements arrived at in step five.

Step seven provides procedures for choosing and ordering substeps for each of the major elements.

Step eight directs the user to test and then revise the purpose and/or procedures if necessary.

Perhaps a word is in order about the levels of generality of
methodologies. Metamethodology would appear to be the most general, as it has been used to construct not only this dissemination methodology, but also needs analysis, evaluation, research design, and other methodologies.

In another way, however, the dissemination methodology proposed here is a kind of metamethodology. It is designed to be a tool to enable product developers to disseminate their products to target groups. Those who apply it will, in effect, develop situation-specific strategies (sub-methodologies, if you will) for disseminating their own products. An almost infinite variety of these situation-specific methodologies is possible.

2.3 Applications of the Methodology

There appear to be four different applications of the methodology:

1. When the disseminator is working for a product developer. A special case of this would be when the disseminator him/herself is the product developer.

2. When the disseminator is working for an agency which is funded by either the government or some private foundation (e.g., Kettering).

3. When the disseminator's primary occupation is not dissemination (e.g., he/she might be a college faculty member), but dissemination is simply one of a number of interests of the individual.

4. When the disseminator is working for a consumer group (e.g., a school system). Typically, in such a case, the disseminator would have additional responsibilities.

The two most obviously different cases are numbers one and four. In case one, the disseminator is working for a product developer, and typically would be paid by the product developer. The major task is to
disseminate the product (though only when it meets real needs.) There is pressure on the disseminator to perform two tasks: (1) to identify population with a need and (2) to disseminate the product.

In case four, the disseminator is working for a consumer group –- let us say, a school system. His/her job is threefold: (1) to identify the prioritized needs of the group, (2) to find products that meet those needs; and (3) to disseminate the products within that group. His/her priorities are different from the disseminator working for a product developer.

Cases two and three could be like either one or four, and could possibly be a combination of the two; it could depend on whether the funded group or college faculty member were more interested in disseminating a selected product or in assisting a selected population; both aspects might in fact be involved.

The methodologies for all four cases would probably be different. They may well have more similarities than differences, but there would very likely be differences nonetheless. In this study, due to resource limitations, only case one will be considered.
Chapter III

Rationale for the Purpose and Steps of the Methodology

3.1 Introduction

The purpose of this chapter is to provide a detailed justification for the purpose and each of the steps in the methodology. Literature from such sources as rural, medical, and general sociology; economics and marketing; and education will be cited in support of the steps included.

Actually, the bulk of research reported in knowledge diffusion and utilization is concentrated in sociology and anthropology. Some work has been done in marketing research, although this is a much newer field. Relatively little dissemination research has been completed in education. This methodology represents an attempt to synthesize the best available knowledge from the various disciplines mentioned.

In the following pages, the purpose, and all the steps of Draft I of the dissemination methodology will be listed. This will be followed in turn by the justification of the purpose and the rationale for including each of the ten major steps.

3.2 Dissemination Methodology: Draft I

Purpose: To meet needs through the dissemination of products.
Case I: The disseminator is working for a product developer (a special case -- the disseminator is the product developer)

Case II: The disseminator is working as an independent change agent (i.e., his/her remuneration would come from something like a university salary; dissemination is not his/her only major concern; rather, one of a number of interests)

Case III: The disseminator is working for a funded agency whose function is to disseminate products (for example, the Far West Laboratory for Educational Research & Development)

Case IV: The disseminator is working for a consumer or group of consumers, (e.g., a school system)

I: Negotiate a contract with a product developer interested in dissemination
   A. Explain each major step in the methodology to the product developer
   B. Identify the product to be disseminated
   C. Identify the resources available for the dissemination effort
   D. Prepare the contract and secure the product developer's final approval

II: Plan the implementation of the remaining steps in the methodology

III: Have the product developer design -- or adapt, if the product is already designed -- the product to be as amenable to dissemination as possible, without changing the character of the product
   A. Determine the resources available for this step
B. Make an initial judgment as to what general populations benefit from the adoption of the product.

C. Make the product as compatible with the potential adopter's values, culture, and/or traditions as possible.
   1. Determine the values, culture, and/or traditions of the potential adopters
   2. Determine the adaptability of the product
   3. Adapt the product to the values, culture and/or traditions of the potential adopters

D. Keep the cost of the product as low as possible
   1. If product costs nothing or almost nothing (e.g., a research report advocating some variety of behavior change), move to Step III.E.
   2. Break the product down into component parts if possible
   3. Determine which of the components are essential to the product if it is to accomplish the purpose for which it was designed
   4. Eliminate those components found to be non-essential in Step 3
   5. Continue to break down the components until it is relatively easy to determine the lowest possible cost for each. The total will then be the lowest possible cost for the product
   6. Document cost information for use in Step V

E. Reduce the complexity of the product as much as possible
   1. Steps III.D.2. through III.D.4. will have yielded components of the product. If the components are broken down as far as possible, go to Step 3
   2. Break down the components into their most basic sub-components
   3. If necessary, provide explanation of the final list of components of the product
   4. Document complexity information for use in Step V
F. Make the product "divisible", so that it can be tried initially on a small scale

1. Determine whether the product is divisible or can be made divisible without sacrificing its ability to accomplish its purpose. If it is not, or cannot be made divisible, go to Step III.G.

2. Determine how the product can be tried on a limited basis
   a. Determine whether only part of the product need be tried
   b. Determine whether only a part of the adopting population (given that it is made up of more than one person) needs to try the product to give it a fair trial
   c. Document all possible ways the product can be made divisible for use in Step V

G. Make the product observable, if possible, so that a potential adopter can see it in operation before he makes his decision.

1. Determine whether any institutions already use the product

2. Determine whether the product developer or the disseminator can demonstrate the product

3. Document observability for use in Step V

H. Devise appropriate support services which the adopter may avail himself or after adoption of the product.

1. Determine potential difficulties adopters can encounter when using the product

2. Determine which of these can be eliminated, or at least reduced, by providing support services to the adopter

3. Plan specifically support services to reduce problems identified in Step 2

IV: Identify general populations that will benefit from the adoption of the product (potential adopters)

A. Determine the resources available for this step
B. Identify general populations that have a need for the product

1. Determine all populations that could possibly have a need for the product
   a. Read the relevant literature
   b. Talk with people whose work is in related areas
   c. Brainstorm all possible general populations

2. Determine if the general populations identified in Step IV.B.1. actually need the product
   a. Read relevant literature on these populations
   b. Talk with experts on these populations
   c. Sample opinions from the populations themselves
   d. Conduct relevant research on these populations

3. Compile a list of populations that are identified as needing the product

C. Among these populations, identify those sub-populations for whom the product fills a high-priority need

1. Implement the needs analysis methodology, using at least a sample of the target sub-population

2. Determine whether or not the need the product fills has a sufficiently high priority on the needs of the population; if it does, go to Step IV.D.; if not, select another sub-population and implement needs analysis again

D. Of these, identify, as far as possible, those sub-populations on whom the product would have seriously detrimental side effects, and leave them out of the dissemination effort

1. If the resources are relatively small, make judgment from existing relevant knowledge
   a. Brainstorm possible side effects
   b. Talk to people knowledgeable about those sub-populations
c. Read relevant literature on those sub-populations

d. Sample opinions from the sub-populations

E. The above steps will result in a set of potential adopters who will be the target population; if it is different from the group identified in Step III.B., consider whether or not you need to recycle from Step III.C. on

V. Identify, among the designated potential adopters, those subgroups most likely to react favorably to the product and focus communication upon them

A. Determine the resources available for this step

B. Determine those in the population who are the early adopters

1. Decide on definition of "early adopter"

2. Identify products used by the target population similar to the product to be disseminated

3. Determine those in target population who have a record of early adoption of those products

   a. Examine available records of adoption of those products
   
   b. Talk with those who use those products
   
   c. Talk with those connected with the adoption of those products

4. Compile a list of those identified as "early adopters"

C. If resources are relatively large, and if there are a relatively large number of early adopters, determine the opinion leaders among the early adopters. If not, go to Step V.D.

1. Use other sociometric devices to identify opinion leaders (e.g., questionnaires that ask, "name the three colleagues from whom you would be most apt to seek advice with regard to (whatever the nature of the product is)"
2. If the disseminator has insufficient expertise in interpreting sociometric devices (if sophisticated sociometric devices are in fact used), employ an appropriate consultant.

3. Compile a final list of those members of the target population to be the first at whom dissemination efforts will be directed.

D. Develop a professional level (as opposed to friendship level) of rapport with the potential adopter identified in Step V.B.4. or Step V.C.3.

1. Observe common rules of courtesy carefully (punctuality, politeness, etc.)

2. Remain honest and as objective as possible at all times.

3. Be aware of the potential adopter's professional activities, or the activities of his/her institution.

4. Make your interest (if genuine) in his/her activities or those of his/her institution known to the potential adopter.

5. Explain clearly to the potential adopter that your intent is to disseminate the product only to meet needs. If he/she does not see that it meets a need, you are not interested in disseminating the product to him/her.

6. Explain fully your role in disseminating the product.

7. Be able to explain readily any aspect of the product.

E. Explain the product fully, and describe how it will meet the potential adopter's needs.

1. Explain your perception of the potential adopter's needs (or the needs of his/her system). If the potential adopter's diagnosis, and if the potential adopter and the disseminator cannot reach an agreement on needs, go to another potential adopter. Otherwise, proceed to Step 2.

2. Explain your perception of what the total impact of the product will be on the potential adopter's system.
3. Explain the characteristics of the product that were determined/developed in Step IV
   a. Explain the cost of the product
   b. Explain how the product can be observed in use (if it can)
   c. Explain how the product can be tried on a limited basis (if it can)
   d. Explain its compatibility with the cultures, values, and traditions of the potential adopter (if it is, in fact, compatible)
   e. Explain the support services available for use if the product is adopted

VI: If the potential adopter(s) decide(s) to adopt, make the product available to him/her as soon as possible, including all available support services if they are desired

VII: If resources for this step remain, implement the "2-step model" i.e., help the opinion leaders disseminate the product to others in the population
   A. Determine whether the opinion leader wants to help in the dissemination effort
   B. Determine whether the opinion leader is to be trusted with the resources available for this step. If not, go to Step VIII
   C. Determine how much and what kinds of resources the opinion leader needs
   D. Make the resources available to the opinion leader

VIII: Evaluate the results of the adoption/rejection
   A. The Fortune-Hutchinson evaluation methodology is recommended with the product developer as the decision-maker
   B. If adopted, evaluate its acceptance, use, and impact, including unintended outcomes
1. If it meets the adopter's need, proceed with other potential adopters in the same manner -- i.e., return to Step IV

2. If it does not meet the need, or for some other reason causes trouble for the adopter, return to Step III

C. If rejected, evaluate reason(s) for rejection and return to Step III or IV, as the product developer decides (i.e., he may choose either to redesign his product or to aim the existing product at a different target population)

IX: Proceed through Step IV - VIII until the product is completely disseminated, or until resources run out

X: Evaluate the success of the methodology and revise where appropriate

3.3 Description and Implications of the Purpose

The purpose of the methodology is to meet needs through the dissemination of products. The components of the purpose are such that two conditions must be met if the purpose is to be maximally fulfilled: (1) the product (whether it be a hardware-type product, a process, or an idea) must be disseminated to the greatest degree possible. The methodology must therefore provide a process for the identification of needs, and a process for the dissemination of products; and, in fact, both these processes are included here.

The purposes are seen by many scholars as complementary. Saunders and Samora (1955) note that a need must be felt for a product or service if that product or service is to succeed. Dobyns (1951) writes: "An induced technological change will succeed to a degree proportionate to the extent to which the administered people feel a need for it, are brought into its planning and execution, and feel it to be their own [p. 31]."
Although the subpurposes appear to be complementary, special problems can arise when a population does not feel a need for a product that, according to the best available evidence, meets a real need for them. This problem will be dealt with later.

It seems appropriate at this point to briefly contrast the purpose of this methodology with some traditional marketing purposes. Mortimer (1959) notes that marketing has traditionally equated consumer need with consumer willingness to buy (emphasis mine). Kotler (1967) adds: "... to a marketer, the market is all persons or business units who buy or who may be induced to buy a product or service [p. 1]."

Another contrast is the steps built into this methodology to insure maximizing need reduction as opposed to the traditional marketers' concern of greatest possible return on the dollar. Kotler (1967) adds: "A substantial increase in sales is no cause for management satisfaction if it is accompanied by a decline in profits [p. 1]." Friedman (1962) states it very graphically: "Few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible."

There are those who would maintain that the question is one of ethics, and that it makes little sense to try to build an ethic into a methodology. There is, however, an alternate position that can be de-

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*A case can be made for the position that meeting real needs and increasing profits are not incompatible purposes at all. It can be argued that the more sensitive business becomes to the real needs of its clients, the greater its profits will be. There are many, of course, who would disagree.*
fended. It appears quite reasonable to believe that, if the methodology should gain a degree of acceptance, the ethic will become increasingly acceptable to more and more people and groups. Capitman (1973) has this to say: "A faulty set of theories has separated business and other institutions from normal human activity, and a legal structure has been treated that treats business as incapable of morality. Instead of morality, there is the rather flimsy and incomplete web of the law... At the end of World War II we discovered in the Nuremberg trials a new concept of a soldier's morality... The issue has been raised again in regard to My Lai and Vietnam. If we can change so ancient a code as that of military obedience, we also can look upon the role of business, and individuals involved in it, in a new way. We can evolve new moral standards for behavior which, in the long run, may be more effective and meaningful than the imperfect legal structure [pp. 130-131]."

All evidence considered, it seems reasonable to give the methodology the following purpose: to meet needs through the dissemination of products.

3.4 Description of and Rationale for the Steps of the Methodology.

This section will describe in detail the ten major steps in the methodology listed in section 3.2, and the major substeps of each. The methodology, it will be noted, deals with product variables (e.g., cost, trialability, observability, etc.) and population variables (e.g., opinion leadership, prior innovative behavior, etc.). It also
considers diffusion agent procedures and criteria for evaluation of dissemination efforts.

I. Negotiate a contract with a product developer interested in dissemination

A contract eliminates the problems that arise from verbal agreements. The disseminator knows exactly what his/her responsibilities are, and the product developer knows exactly the services he/she will be receiving. The following four steps suggested procedures for negotiating the contract.

A. Identify the product to be disseminated.

It is essential that there be a common understanding between the product developer and the disseminator as to the exact nature and specifications of the product to be disseminated. In some cases, this will be reasonably obvious (e.g., if it is a new kind of audiovisual aid). However, if the product is something much broader, like "individualized instruction," it will be necessary to reach a common understanding of just what its specific components are. "Operationalization of Fuzzy Concepts" (Hutchinson et al., 1973) can be a useful tool in this step, particularly if the product is quite complex.

B. Identify criteria that will define adoption of the product.
Products are often adopted incompletely or with some adaptations, particularly if they are complex. It will be necessary to arrive at some criterion point at which the product developer will be satisfied that his/her product has been "adopted". This will provide one of the important criteria for the success of the dissemination effort.

This will, in some cases, be quite easy; in the case of complex products, it may well be necessary to break the product into its basic components and decide which of these must be adopted in order that the product developer be satisfied.

A helpful alternative might be to brainstorm all the ways the product could be partially adopted or adapted. A list of these could be given to the product developer for the selection of possible alternatives.

C. Identify the resources available for the dissemination effort.

It is extremely valuable to determine just as early as possible the resources available for dissemination. Options available given extensive resources are almost infinitely more varied than those available given few resources. Particularly
if the resources are extensive, however, many activities (e.g., an elaborate media campaign or administration of a sophisticated sociometric survey) must be planned well in advance. It will prove very helpful if course of action determinations can be made very early.

If those empowered to make decisions experience difficulty arriving at a resource allocation, it might prove helpful for the disseminator to devise several alternate plans. All should be specific to the product, but should describe, at least generally, activities that could be carried out given small, middle-level, and extensive resources.

D. Prepare the contract and secure the product developer's final approval.

Among other things, the contract should include: (1) product specifications; (2) available resources; and (3) criterion for evaluating success.

II. Plan the implementation of the remaining steps in the methodology

This step is necessary in order to assure that each of the steps receives the optimal level of resources, given the total resources available for dissemination.

Resources (time, money, etc.) should be initially divided as indicated in the resource allocation chart (found in the text of the methodology itself, in Chapter IV.)
should be regarded as tentative, and should be reviewed by
the product developer and/or other staff personnel to determine
whether the distribution is realistic and reasonable.

III: Have the product developer design -- or adapt, if the product
is already designed -- the product to be as amenable to
dissemination as possible, without reducing the product's
capacity to accomplish its intended purpose.

Because it is important that the product have as many
of the attributes discussed in this step as possible, and
because adaptation of an already developed product can be
difficult, it is advisable to consider dissemination early
in product development. Kotler (1967) notes that "marketing
may stand officially at the end of the assembly line, but
unofficially its influence must be felt at the drawing
boards [p. 3]."

The following ten steps are recommended for design/adaptation:

A. Determine the resources available for this step.

B. Make an initial judgment as to what general populations
will benefit from the adoption of the product.

This step directs the user to implement the Coffing-
Hutchinson Needs Analysis Methodology (Coffing, 1972).
The methodology contains both simple and complex procedures,
and most often at this stage only simple procedures are
appropriate. This will entail the best judgment of the
product developer, the disseminator and/or some designated
expert(s) as to the most appropriate populations.
C. Make the product as compatible with the target groups' values, traditions, practices, and/or culture as possible.

(The nature of this step makes obvious the need for some care in performing Step IV.B.)

This step directs the disseminator and the product developer to design or adapt his product so that it conflicts as little as possible with the existing value structure and traditions of the target group. This is a bit of an anomaly since any product new to a group is an innovation, and an innovation is, by nature, at least somewhat different. But there exists a general agreement that adoption is affected by this compatibility factor.

Research conducted by Brandner and Kearl (1964), Tully et al. (1964), Mead (1953), and Brickell (1964), among others, supports this notion. Brickell writes:

"The ideal circumstances for the dissemination of the new approach through demonstration are those which are ordinary, unenriched, and normal. At their best, they are exactly like the everyday situations in the observer's own school and community. Anything which the observer could label "abnormal" or "unrealistic" . . . is sufficient to rob the observed program of persuasive effect. [p. 499]."

Mead notes, however, that this can be exceedingly difficult:

". . . it is not possible to lay down prescriptions for what is to be done in any particular case . . . [p. 304]."

Not every study supports this concept. Kivlin and Fliegel (1967), in a rural sociology study, found compatibility negatively related to likelihood of adoption. A possible explanation might be that compa-
bility is most important in cases where there is relative satisfaction with the status quo.

It is very difficult to come up with thoroughly operational procedures to make the product compatible with a target group's values, cultures and/or traditions. Several basic steps may prove helpful, however. First a determination must be made whether or not the product is by nature adaptable to a variety of cultures or systems; if it is not, to continue with Step C is pointless; if it is, then the disseminator must determine the ways that the values or traditions of the target population would be affected by the product. Methods for doing this would vary with the available resources. If they are small, determination will probably have to be made via interviews with a small number of experts whose field might be affected by the product. More effective, and requiring more resources, would be expert judgment supplemented by some variety of survey research, conducted using all, or a sample of the population as respondents. If resources are quite large, more sophisticated behavioral research may be called for.

D. Keep the cost of the product as low as possible.

It is intuitively obvious that the lower the cost of the product, the lower the risk of its trial; it behooves the product developer, therefore, to reduce the cost of the product in whatever ways possible. More people buy paper-backed books than hardbound books; more have Chevrolets than Cadillacs. This concept has educational applications
as well; Mort\(^2\) (1964) notes that innovations that increase cost move more slowly than those that do not."

It is important to realize that cost factors are many and varied. Cost can include the man-hours it takes to train a staff to use a product, as well as the cost of the actual hardware itself. Cost can also be less tangible -- the psychological toll taken, for example, brought about by a behavior change that adoption of a product might necessitate. Ways to reduce cost, therefore, must include methods of reducing the cost of the product itself (assuming there is some dollar cost) and the provision of various support services necessary to reduce other kinds of costs.

The product cost is difficult to reduce if it is, for example, a simple piece of hardware such as a piece of audiovisual equipment or a set of books; the only alternative available is to use cheaper materials, and this may not be possible or proper. If the product is a complex one, however -- e.g., a broad system for individualizing instruction -- a useful tool is to break the product down into its smallest component parts (this may well have been done, or at least begun, in Step II) -- and decide which of these are essential and which can be discarded without damage to the effect of the system. Those non-essential components may then be discarded. In addition, the more specific the components of the product, the easier it will be to determine the lowest possible cost for each component.

\(^2\)Manuscript edited after Mort's death by William S. Vincent
Provision of support services is not such a simple process. To provide services to an adopter usually requires time and/or money of the product developer which may or may not be available. If they are not, the disseminator proceeds to Step IV.E. If they are, it is necessary to determine what kinds of support services are likely to be needed. Useful techniques for making this determination include; discussion with individuals who are using a similar product, and/or a survey of the opinions of members of the target group as to what they think necessary support services would be.

Once a decision about necessary support services has been made, it is necessary to determine which of these can be provided given the product developer's resources. These support services can then be built in as a part of the product.

Sasaki (1956), and Miles (1964), among others, discuss the importance of support services. Miles notes that "innovations with built-in implementation supports should diffuse more rapidly than those not so supported. For example, in the case of certain curricula prepared by national groups, training in the use of the innovation is part of the innovation, and is available at no additional dollar cost. If the support is via materials, the more 'self-teaching' they are, the more likely are adoption and continued use [p. 637]."

E. Reduce the Complexity of the Product as much as possible.
The research in the area is inconclusive; some studies show that complex products tend to diffuse more slowly, and some show that it makes little difference whether a product is relatively complex or relatively simple. Research by Kivlin and Fliegel (1967), and Fliegel and Kivlin (1962), Singh and Warlow (1966), and others, indicate that complexity of a product does indeed slow the diffusion process. On the other hand, studies by Carlson (1965), Singh (1965), Tucker (1961), and others, reveal that complexity is correlated to speed of adoption.

Because a significant number of studies do reveal an important relationship, and because it will in no case do any harm to perform the step, it is included in this methodology.

There are procedures which should prove helpful in accomplishing this task; some of these may have already been accomplished, i.e., breaking down a complex product into basic, operational components. The separate components can then, if necessary, be explained in terms of their purposes, the role they play in the total product, the adjustment or training the adopter will need in using them, and all the ways in which it is anticipated they will affect the adopter.

It is important to keep in mind that there are very likely cases in which it is certainly advisable not to go to great lengths to explain the product on the most basic level; a relatively sophisticated audience might even find this insulting. It is wise, however, to have this level of explanation prepared in the
event it is needed.

F. Make the product divisible, or trialable, so that it can be tried initially on a small scale if desired.

This is another step intended to reduce possible apprehensions of potential adopters toward the product. If, for example, an adopter or an adopting group can choose to try an innovation in one classroom rather than the whole school, the risk is obviously much lower; if the product is successful it can then be adopted on a larger scale. Marsh (1964), found trialability an asset in the dissemination of the PSSC physics program, for example. Ryan and Gross (1943), arrived at a similar conclusion in a rural sociology study, noting that this is especially important for early adopters: "While the very late operators generally took up the new seed immediately for a larger share of their acreage, the median for those first using the hybrid in 1939 amounted to only 30% of their total corn acreage for that year p. 18 ."

Miles (1969), notes the important point that the trialability "... must be permissible rather than mandatory, since mandatory flexibility in the use of an innovation tends to conflict with the tendency for organizational practices to move in the direction of routine, stability, and regularity  p. 636 ."

Two determinations need to be made to arrive at the degree of divisibility of the product: (1) How much of the product has to be tried in order to fairly judge whether the product will
adequately meet a need of the consumer? and (2) How many people (or groups) out of the whole population must try it to make this judgment? A K-12 social studies curriculum, for example, can be adopted partially -- the eighth grade (or the ninth grade, or whatever) materials can be tried the first year or two, and if the results are favorable, more can be adopted. In the case of polio vaccine, to cite an opposite example, the entire product must be adopted.

With regard to the second point, how large a percentage of the group would need to use the product in order to give it a fair trial? Continuing with the example from the previous paragraph, this could quite possibly be achieved with a minimum of two or three social studies instructors out of a department of ten. The polio vaccine would need to be tried by a very large number of people -- perhaps a substantial percentage of the total population, given that the proportion of persons getting paralytic polio is relatively low even in the absence of a vaccine. Both of these determinations should be made to arrive at the total divisibility of the product.

G. Make the product observable, if possible, so that a potential adopter can see it in operation before he makes his decision.

There is much evidence that if a target group or group member can observe a product in operation, the adoption rate is increased greatly. The reasoning is basically the same as in the case of
cost reduction and trialability; the risk often associated with adoption of a new product is reduced. Marsh (1964), found that teachers who rejected the PSSC program apparently did so because "they had no visible proof that the new materials actually worked under regular school conditions . . . On the other hand, wherever neighboring teachers have been able to see for themselves -- see PSSC supplies working in ordinary classrooms, in whatever kind of school -- adoption of the new syllabus has spread year by year \[ p. 264 \]." Kivlin and Fliegel (1967), add that perhaps the willingness of some farmers to take what appear to be greater risks by adopting with less trial "may reflect a lesser need to experiment because of greater vicarious experience with the innovations as a result of observing . . . neighbors or other innovators \[ p. 87 \]." At the earliest stage of dissemination, the only way to give the product an observability dimension is for the product developer to demonstrate the product personally. If the product is subsequently successfully disseminated, it would be a useful step for the product developer to arrange with the early adopters to allow subsequent adopters to observe the product in operation. It may be necessary to offer the adopters something in return, e.g., special support services, etc.

If the product itself cannot be made observable, it may be possible to make evidence of the product's effectiveness and worth available to consumers. This is admittedly a less desirable alternative, but is far better than trying to disseminate a product that has no visibility or evidence of its value at all.
H. If possible, try to design/adapt the product to make its positive effects as visible as possible as soon as possible, and to suggest possible measurement techniques to determine the effectiveness of the product.

It is a basic principle of human psychology that new behavior that is rewarded is more likely to be continued than behavior that is not rewarded. It follows, quite logically, that the sooner the effects of any newly adopted product or process is visible, the more likely the use of that product or process is to continue. Rogers and Svenning (1969), concur, noting that "the more easily the essence of an innovation can be communicated and the more visible the positive results of the innovation's use, the faster its rate of adoption [p. 6]."

Erasmus (1952), found that, in Ecuador, "a program that is rapidly, spectacularly successful (e.g., a yaws campaign) much more rapidly displaces folk medicine than programs of preventive medicine with their theoretical justifications."

This is a particularly thorny problem in the field of education. Many educational products and processes are designed to have only long-term effects, typically in such areas as changed teacher behavior and/or improved student achievement. Since the benefits are long-term, and since so often innovations are initially disruptive, there are often serious problems in securing the continued use of the innovation. Support services can help this problem, but it is necessary also to provide some manner of feedback to the adopter
about the effects of the behavior change, if this is at all possible. This is a problem that has not been dealt with very extensively, and hence is an area in which it is very difficult to provide specific guidelines.

It does seem, however, that it would be helpful to describe in detail early indicators of success in the use of the product or process, e.g., evidence at the various stages of implementation that would indicate whether or not the product or process is accomplishing its intended purpose. It may be difficult to arrive at such guidelines prior to the first few adoptions; the best way would appear to be, again, a small-scale field test of the product on a manageable segment of a target population. This requires time, money and the cooperation of a significant number of persons. It is really the only way, however, that the operation of the product can be observed firsthand, permitting the recording of early indicators of success. If resources do not permit a field test, reliance must of necessity be placed on expert opinion and/or information that might be gleaned from relevant literature.

After the first few successful adoptions (if they do occur), however, the problem should become somewhat easier to handle.

If implementation by the first few adopters is studied carefully, and the process carefully described and documented, it will become increasingly easy to pinpoint indicators of success. These can then provide guidelines, which can be provided to subsequent adopters. As the number of adoptions increases, of course, the
guidelines will typically become increasingly accurate and generalizable.

I. Determine problems not yet dealt with that could be encountered by potential adopters and plan ways to counteract them.

This step is intended as a final check on the product and its likely effects on the adopter. Ideally, of course, a field test should be conducted, since unintended outcomes are so often exceedingly difficult to predict. If this is not possible given the resources, users of products similar to the one of concern can be surveyed to determine difficulties they have encountered. If resources are insufficient for either of these, the disseminator must fall back on expert opinion and informative available literature (which, of course, are useful supplements in any event).

IV. Identify general populations that will benefit from the adoption of the product (potential adopters).

It is at this stage that a judgment is made as to what the broad target group(s) will be. After determining all groups that could possibly use the product, it is necessary to delimit the population using the criteria suggested in the following substeps:

B. Identify general populations that need the product.

Part of the purpose of the methodology is to meet needs; this is defeated if the product is disseminated where it is not needed.

C. Identify those groups for whom the product meets a high priority need.
This step promotes the most efficient use of resources. Groups that need the product most are most likely to adopt. Groups for whom the need is not great are apt to treat the product with much less enthusiasm.

D. Identify those groups on whom the product would have seriously detrimental side effects and leave them out of the dissemination effort.

Reasons for the inclusion of this step should be obvious; it is patently foolish to get into a situation where one is apt to do more harm than good.

In the performance of B, C, and D above, the ideal obviously involves small-scale field tests of the product. These demand considerable resources; if they are not available, literature, expert opinion, etc., should be used.

Probably the best way to identify those most apt to adopt the product early is to identify those who have adopted similar products early. The first determination to make is to identify those products sufficiently similar to the product to be disseminated. Once this is done, there are several approaches that should prove useful. The most useful, because it is in all likelihood the most accurate, is to examine the available records of the adoption of those products (if any such records exist). Coleman, Katz and Menzel (1966), for example, wanted to determine early adopters of a drug, gammanym. Their procedure was to examine available records of when the doctors in the study first prescribed the drug. Another
approach is to simply talk with those who use the product and ask them when they first began to use it. This approach (used by Ryan and Gross (1943), and many others) is obviously more conducive to errors. Memories can be faulty, especially if there is a significant time lapse involved. The second method does have the advantage of being easier to use, however, as records are often difficult to obtain and sometimes confidential. If these approaches fail to yield data of value, the developer of the product may be able to provide some kind of information on adoption of the product.

It may be that resources do not exist to identify innovators indirectly. There are certain characteristics that have been identified that are typically associated with innovative behavior.

Innovators typically have higher social status than others. Carlson (1965), found that high school superintendents with higher social status (as measured by level of education, salary, opinion leadership, and colleagues' judgments of their professionalism) adopted a modern math program significantly earlier than superintendents with lower social status. Rogers (1958), and Madigan (1962), also found social status -- although their measures of it were different -- to be a characteristic of innovators. Rogers (1958), measured social status by rent paid, net worth, education, prestige self-rating, and formal social participation -- to be positively correlated with innovativeness. Madigan (1962), reached the same conclusion -- with status measured by education, income, occupation, literacy, and popularity in social clique.
Another characteristic that can be of value is the size of the adoption unit. Carlson (1965), found that modern math was adopted more readily by larger schools than by smaller. Cawelti (1967), reached similar conclusions and suggested that another dimension is very likely the size of per pupil expenditure. This is a relatively easy dimension to determine, and may be particularly valuable when resources for this step are relatively small.

Another characteristic that can be made use of is the innovator's propensity for using mass media -- considerably more so than those who are less innovative. Coleman, Katz, and Menzel (1966), note that "the early user of gammanym was considerably more likely to subscribe to a large number of medical journals. [p. 44]."

Gross and Taves (1952), also found this characteristic to be true of farmers.

This is a valuable item of information, especially if resources for identification of innovators either are extremely small or are non-existent. It appears that the mass media would be an effective way to reach at least some of the innovators. The same type of campaign used in Step IV -- only more focused on (a) specific group(s) -- would likely be appropriate.

C. If resources are relatively large, determine those members of the decision audience that are the opinion leaders among the group.

If the opinion leaders among the population adopt the product, they will provide much of the impetus for the rest of the population
to adopt. There is considerable evidence that, especially with later adopters of a product, the influence of friends, neighbors, and peers is much more important at the decision stage than the influence of mass media or an outside dissemination agent could be. Step VII will discuss in more detail the need for working through opinion leaders (and innovators) and procedures for doing so. The problem involved at this stage is that of identification of these opinion leaders.

An effective method of identification of these individuals is the administration of a sociometric device designed for that purpose to the population. Carlson (1965), and Coleman, Katz, and Menzel (1966), have done exactly that. Carlson asked the superintendents in his sample to name all persons from whom they had deliberately sought advice and information regarding new educational practices, during a ten-month period of time. He contends it is important to define opinion leaders "as those persons sought out for advice and information as distinct from those persons from whom advice was obtained but not deliberately sought. [p. 32]"

Coleman, Katz, and Menzel used a similar device with physicians.

Both surveys would yield information about those persons whose opinions are most respected and sought among school superintendents and physicians, respectively.

Obviously, it will not always be feasible to administer this type of sociometric device. In such cases, it will be necessary to
identify characteristics associated with persons or institutions who are opinion leaders and focus attention on those groups.

Research by Carlson (1965), Emery and Oeser (1958), Rogers with Svenning (1969), and Summers (1968), indicate that opinion leaders tend to have higher social status than do others. Emery and Oeser note that opinion leaders among farmers . . . "form a status hierarchy the basis of which is competent progressive farming, but undoubtedly strengthened by its close relation to socio-economic status [p. 50]."

Opinion leaders also tend to be more innovative than most others in the population. Carlson (1965), Emery and Oeser (1958), Katz (1957), and Wilkening (1962), reach this conclusion, as does Madigan (1962), who notes that "leadership appeal in the clique is a significant predictor of receptivity to innovation."

By identifying those with higher social status -- as might be measured by an enormous variety of things -- and those who are in general more willing to innovate, there is a reasonably good chance that we can reach a large number of opinion leaders. The added benefit that many of these will be included among the most innovative persons is obvious.

D. Develop a professional level of rapport with the potential adopter identified previously.

This step is necessary if communication is to be effective. It is an individual process, and substeps are probably of limited value.
E. Explain the product fully, and describe how it will meet the potential adopter's needs.

In this step, the dissemination should describe the product as completely as possible, explaining just how it is designed to meet the potential adopter's needs. In this step, the information generated in Step III (cost, trialability, observability, etc.) is presented for the potential adopter's consideration.

VI: If the consumer(s) decide(s) to adopt, make the product available to him/her/them as soon as possible, including all available support services if they are desired.

VII: After several adoptions have occurred, and if resources remain, enlist the aid of the adopters in the dissemination of the product.

There is evidence that mass media and sources outside the consumer's system is effective at the awareness level -- and for some innovators and early adopters at the decision level -- but that individuals rely primarily on friends, neighbors, and professional colleagues for help in evaluating a product prior to actual adoption. Studies by Ryan and Gross (1943), and Coleman, Katz and Menzel (1966), support this theory.

Coleman, Katz and Menzel (1966), write that "... in the 'evaluation' phase, however, which culminates in the decision to actually try the drug, the informal and more professional sources of influence predominate. These informal sources are not the relatives, neighbors, and firmends of the farming studies, but
professional colleagues (the medical equivalent, of course, of fellow farmers)." They note the importance of professional journals in the evaluation stage as well, but conclude that the single greatest legitimizing source is local colleagues.

The concept is less well tested in the field of education, and Miles (1964), notes that it may or may not be the best approach; he does concede, however, that "potential users of the innovation seem to trust the accounts of peers who have actually tried the innovation, and can testify as to its worth, give aid with skills required, etc. [p. 652]." At the very least it will do no harm, and substantial evidence is available in other fields to indicate that to work through opinion leaders and innovators in the community for at least part of the rest of the dissemination can be a very useful approach. An example of the use of this technique would be the use of teachers from a school that had adopted a new curriculum as participants in a workshop held for schools that are potential adopters of that new curriculum.

Several determinations will have to be made in this step. They are reasonably obvious and self-explanatory, and:

A. Determine whether the opinion leaders/innovators are willing to help in the dissemination effort.

B. Determine whether the opinion leaders/innovators should be entrusted with the resources (or some of the resources) available for this step.

C. Determine how much and what kinds of resources the opinion
leaders/innovators need.

D. Make the resources available to the opinion leaders/innovators.

If the resources are available, and the disseminator and the opinion leaders/innovators are willing to participate, the implementation of this phase may proceed. The product developer will provide the resources (i.e., sample materials, assist personnel, travel funds, physical facilities, technical advice, etc.), and work as closely with the opinion leaders/innovators as seems to be appropriate. It should be noted that, by definition, "opinion leaders" exert a considerable degree of natural influence over neighbors and peers, and it will probably not often be wise for the disseminator to tamper very much with this by being excessively obtrusive.

VIII: Evaluate the results of the adoption/rejection.

The Fortune-Hutchinson evaluation methodology (Hutchinson et. al., 1975) may be particularly useful at this stage since it is a set of operational procedures designed to accomplish the purpose, "to provide data for decision-making." The process can be basically described as identification and operationalization of decision-maker goals, measurement of the degree to which they are being accomplished, and the reporting of results.

The methodology essentially provides for an evaluation of the attainment of the decision-maker's goals for some particular
enterprise. The "decision-maker", in this case, will be the product developer, and the "enterprise" will typically be the impact of the product or the reasons for the rejection of the product, or something similar. This methodology is, of course, not the only tool for conducting an evaluation. Other useful works include Stufflebeam et al. (1971), and Popham (1974).

IX: Proceed through Steps IV-XI until the product is completely disseminated, or until resources run out.

X: Evaluate the success of the methodology and revise where appropriate.

The accurate evaluation of any dissemination effort is exceedingly complex and difficult. Most products diffuse rather slowly; often, it takes years for a significant portion of a population to adopt even a very worthwhile product. Ryan and Gross (1943), note that over fourteen years elapsed between the introduction of hybrid corn seed and its adoption in the state of Iowa.

Adoption can be slow in education as well. Carlson (1965) found that it took schools in West Virginia and Pennsylvania from between five and six years to completely adopt modern math, and Ross (1958) adds that it took United States public schools fifty years to adopt a concept of kindergarten.

To properly evaluate a dissemination effort, then, several years must very often be allowed, but it must be recognized that this is not always possible. In such cases only the early indications of effectiveness can be used as criteria for judgment. And what are some appropriate criteria? Since the purpose of the
methodology is to meet needs through the dissemination of products, two obvious criteria are: (1) the degree to which the product is disseminated; and (2) the degree to which needs are met.

A. Extent to which the project is disseminated.

The first criterion is the more complicated of the two to measure. In a limited number of cases, it may be possible to compare the number of persons or groups contacted with the number of groups who adopt the product. This will most often be impossible, especially if the mass media are used. Comparisons may in some cases be possible between all possible adopters or groups and the number who actually do adopt. This can require several years, and several years may not be an available resource. If time is limited, a judgment will have to be made on early indications, e.g., rapid trial, adoption or adaption by innovators and/or opinion leaders, or, if judgment need be made even earlier, expressions of significant interest from relevant persons or groups. Such judgments entail obvious risks, but very often represent the only available alternatives.

B. Degree to which needs are met.

The tools used to measure the original need of the target group for the product may be re-applied. The degree to which the product has met the need may then be judged.

C. Cost benefit criteria.

Another criteria could be a type of cost-benefit analysis. The cost of the dissemination effort is thereby weighed against the
benefit resulting from its dissemination, at which point the product developer makes what has to be a rather subjective decision as to the effectiveness of the effort. Cost factors would include such things as the cost of the product, staff salaries, media use costs, time costs, etc., i.e., direct the dollar costs to the product developer. Also included as costs are indirect effects of the product that may be harmful, either to the adopting population, or even possibly to the product developer. It may be possible to determine other kinds of costs specific to the situation.

The primary benefits would be the completeness of the dissemination of the product and the thoroughness with which it meets the need of the adopter. There may be other benefits, e.g., the betterment of the reputation of the product developer or unintended benefits accruing to the adopting population. It may be possible to determine other situation-specific benefits.

3.5 Summary

The purpose of this chapter has been to provide a rationale for each of the steps and the most important sub-steps. Relevant supporting literature has been cited where appropriate. The following chapter will describe the field test of the methodology.
Chapter I

Field Test of the Methodology

4.1 Introduction

This chapter will describe the development of the methodology during the year it was field tested with the Clinic to Improve University Teaching. Changes in the methodology accrued both from the field test itself, and from additional research in the dissemination literature.

The field test was conducted in the following way: (a) Each step in the methodology described in the last chapter was applied in order (as resources permitted); (b) a judgment was made as to whether the procedures in the step were adequate, and when the step was viewed to be incomplete, modifications were made. The purpose of the field test was to uncover as many weaknesses, problems, and gaps in the methodology as possible.

4.2 The Clinic to Improve University Teaching

The Clinic to Improve University Teaching is the organization under whose auspices the field test was conducted. The Clinic is a branch of the School of Education at the University of Massachusetts, and is funded through a grant from the W.K. Kellogg Foundation. Its purpose is the improvement of teaching, as the name implies. There are five basic steps in the Clinic process: (1) The initial interview, which introduces the Clinic and the client to one another; (2) collection of data on the teacher's performance; (3) data analysis; (4) implementation of teaching improvement strategies; and (5) data re-collection and analysis.
The remainder of the chapter is written in the form of a case study. Each of the ten major steps in draft one of the methodology is listed and underlined. Following each step are the activities conducted and/or the reasons for changing or adding steps. At the end of the discussion of each step is a listing of the modified steps and substeps enclosed in boxes. The revised methodology is presented in the last section of the chapter.

4.3 Field Test of the Methodology

I: Negotiate a contract with a product developer interested in dissemination.

Many difficulties were encountered during the course of the year that one of two things would have resolved: (1) greater power to make final decisions; or (2) a thorough understanding, and acceptance (at least for trial) of each part of the methodology by those empowered to make final decisions. Such problems arose as: (1) the conflict between dissemination considerations and refunding consideration; and (2) the difficulties that arose from the writer not being able to do any face-to-face dissemination; and other problems, all of which will be discussed later. It seems clear that a presentation such as that described below would have reduced significantly the probability of those problems arising. So, some of the substeps in Step I were revised as follows:
IA. Determine the person or group whose decision-making authority is needed for the dissemination effort.

B. Ask to negotiate a contract with the contractor(s). If necessary, deal with someone authorized to represent them.

C. Be sure that decisions made about the contract are made using the person or group's normal decision-making procedure.

D. Make a formal, detailed presentation of the methodology to those responsible for the final decision as to whether to use the methodology. This should include the purpose and implications of each step, and what the use of the methodology would mean for the product of concern.
Questions about resources and techniques were serious problems. It seemed reasonable to devise general varieties of strategies that could be used employing a low, middle and high level of resources. When this was done it appeared to act as a catalyst that broke the serious logjam that had developed; it may well have been only one of several factors involved, but it did help clear the way for more planning of specific activities. The steps added to the methodology are actually somewhat more sophisticated than those actually performed. The revision of Step I.E. is as follows:

I.E. Identify resources available for dissemination

1. Develop at least a general plan, within the methodology but specific to the product, what can be done using relatively low resources (for example, for $1,000 or less)
   a. Decide which steps are the most crucial to follow even given low resources
   b. Decide which steps can be eliminated with the least possible damage, or which can be given very low resources
   c. Devise the product-specific plan according to the revised submethodology

2. Develop at least a general plan, within the methodology but specific to the product, that can be done
using a middle level of resources (for example, between $1,000 and $10,000)

a. Decide whether any of the steps can be accomplished using few resources and which require considerable resources, for a plan of middle-level effectiveness. Allocate the resources, in a very general way, accordingly

b. Devise the product-specific plan according to the revised submethodology

3. Develop at least a general plan, within the methodology but specific to the product, that can be done given a relatively high level of resources. (For example, over $10,000). Each step should be given at least adequate resources in this plan

It became apparent, given the nature of the Clinic process, that there were a wide variety of ways it could be "adopted." It could be adopted completely; parts of it could be tried (i.e., the TABS (Teaching Analysis by Students) questionnaire, some of the teaching improvement strategies, etc.); or it could be adapted by a particular institution to suit its own idiosyncratic needs. It is necessary to have steps in the methodology that take this factor into consideration, so the following steps were added:
I.F. Determine what will be satisfactory to the product developer with regard to consumers adoption of the product.

1. If the product is complex, identify its component parts.
2. Determine whether any of these must be adopted without significant adaptation in order that the product developer be satisfied.
3. Determine at least some reasonable possible adaptations and check their acceptability with the product developer.

It must be pointed out, however, that with many products the number of possible adaptations can be equal to the number of consumers adopting the product. Some judgments must be made on a case-by-case basis.

II. Plan the implementation of the remaining steps in the methodology.

It was necessary at this point to plan the allocation of resources to the rest of the steps of the methodology. Given that this was the first test of the methodology, it was decided that each step would be performed as well as possible without regard to resources. The record of what was done would then serve at least as a partial basis for the tentatively suggested resource allocation chart (Figure 1). The following organization was given to Step II:
II.A. Allocate the resources according to the percentages on the resource allocation chart

B. Examine the resulting allocation in light of the nature of the product and the dissemination effort, and make adjustments if necessary

C. Be prepared to shift the resources allocation as the dissemination progresses. The allocation should be given at least some consideration after each major step is completed
Fig. 1. **RESOURCE ALLOCATION CHART**  
(based on steps in Draft 2)

<table>
<thead>
<tr>
<th>Step</th>
<th>Percentage of time allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>Product design/adaptation</td>
</tr>
<tr>
<td>IV</td>
<td>Conduct campaign to create awareness of product</td>
</tr>
<tr>
<td>V</td>
<td>Conduct needs assessment to determine general target populations</td>
</tr>
<tr>
<td>VI</td>
<td>Determination of groups most likely to receive product favorably</td>
</tr>
<tr>
<td>VII</td>
<td>Determination of innovators and opinion leaders</td>
</tr>
<tr>
<td>VIII</td>
<td>Making contact with initial clients</td>
</tr>
<tr>
<td>IX</td>
<td>Making product and support services available</td>
</tr>
<tr>
<td>X</td>
<td>Use of innovators/opinion leaders in the rest of the dissemination</td>
</tr>
<tr>
<td>XI</td>
<td>Evaluation of adoption/rejection</td>
</tr>
<tr>
<td>XII</td>
<td>Evaluation of success of the methodology</td>
</tr>
</tbody>
</table>

Since Step III has so many substeps, it will be discussed by substep.

**III** Have the product developer design -- or adapt, if the product is already designed -- the product to be as amenable to dissemination as possible, without changing the product's capacity to meet the need.
III.B. Was modified to read:

Make an initial judgment as to what general populations will benefit from the adoption of the product.

1. The Coffing-Hutchinson Needs Analysis methodology is recommended, with the product developer as the decision-maker.

The Coffing-Hutchinson methodology (Coffing, 1972) is recommended because it provides operational procedures for conducting a needs analysis. Its stated purpose is: to provide needs data for decision-making. Other needs analysis methods may be more appropriate for persons or groups whose purpose is different.

The remainder of Step III is concerned with the product adaptation. Except when indicated, my responsibility was documentation of the product adaptation for use in Step V.

The first concern in product adoption is to make the product compatible with the values and practices of the target group. This typically reduces the trauma sometimes associated with the adoption of a new product, and makes the transition from old to new easier.

To make a product compatible is often quite difficult, but was not a problem in this instance, for a couple of reasons. The first is that almost all faculty development/teaching improvement agencies are relatively new; hence, they do not have long established philosophies
or patterns of operation. Second, the Clinic process is sufficiently flexible so that individual adaptations are usually quite easy to make when they are required (e.g., portions may not be tried; questionnaire wording can be changed; faculty instead of students may used as teaching improvement specialists, etc.).

The substeps were revised and expanded, through the use of common sense reasoning and the procedures recommended in Step VII of the meta-methodology (see Appendix). They now read:

<table>
<thead>
<tr>
<th>III.C.1. Determine whether or not the product is by nature adaptable to a variety of traditions, values, practices, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>If it is not, go to Step III.D.</td>
</tr>
<tr>
<td>2. Determine the likely effect of the product on the consumer's values, traditions or practices.</td>
</tr>
<tr>
<td>a. If resources permit, conduct a small-scale field test of the product, using if possible a small random sample of the group or one of the groups, determined in Step IV.B. This is by far the best procedure, since side effects are often very important and frequently quite difficult to predict.</td>
</tr>
<tr>
<td>(1) As far as possible, before the field test, make that feature of the product that meets the need the only thing about that product that is different from what the target group is accustomed to or familiar with.</td>
</tr>
<tr>
<td>For example, suppose a tailored testing...</td>
</tr>
</tbody>
</table>
program is the product of concern. The tailored tests should be given under the same conditions, by the same persons, in the same classrooms, and graded by the teachers (if that is customary). All these things reduce the threat that it is something somehow "alien."

b. If resources are insufficient for even a small field test, the views of people whose systems, practices, etc., will likely be affected should be solicited (e.g., if it will affect the schools, some teachers, administrators, and students should be given the opportunity to react to the product)

c. If resources are extremely small, available literature on the specific values of the group to be targeted, or the opinions of some experts, will be of some help. In other cases, they may be used as supplements to a and b above.

3. If few common values/traditions/practices exist, or if resources were not sufficient to determine them, make the product as adaptable to a variety of situations as possible.

The next concern of the product developer and the disseminator is the reduction of the cost. The lower the cost, in terms of dollars,
time, etc., the lower the risk to the potential adopter.

Meetings were conducted with Clinic senior staff during which the writer pressed for the provision of materials at low or no cost. Resulting decision did much to keep the client's cost of exploring and/or adopting the Clinic model to a minimum.

The decision was made to provide copies of the Second Annual Report and sets of working papers (including all of the paper and pencil tools we use in the teaching improvement strategies, necessary teaching skills, etc.) would also be sent at no cost to the interested agency. This represents potentially thousands of dollars worth of usable materials. An instructional film, that cost $15,000 to produce, was to be made available for a 2-week loan at no cost to the borrowing agency. In a few cases, self-instructional packages on the establishment of a Clinic-style organization would be made available at no charge to interested agencies. Graduate students, and occasionally senior staff, were to be sent as consultants to interested schools if those schools would pay their expenses plus a reasonable honorarium (the Clinic could really not ask its graduate students or staff to do this for nothing, but honoraria were kept at a reasonable level). Occasionally (e.g., a two-week training session given to a state department school in Katmandu, Nepal) the only requirement to be fulfilled was that the interested school pay the Clinic staff expenses for the trip.

The decision was also made to hold a six-weeks summer institute to train teaching improvement specialists and trainers of teaching improvement specialists at the minimum possible cost (though the cost
would even at minimum be fairly substantial.) Participants were to be required to pay for room and board, of course. Other fees were necessary because participants are to take part in a practicum, and it is simply impossible to get faculty clients to go through the process with trainees on a volunteer basis -- at least during the summer, sufficient numbers cannot be thus insured. It is necessary to offer them money, and such funds are not available from the Clinic budget. As a result, participants were required to pay this cost.

It seems fair to say that the Clinic did a great deal to keep the client costs to a minimum. The whole process went rather smoothly, and no new substeps were added.

The next problem faced was to simplify the product (i.e., the Clinic process) as much as possible.

All that was necessary here was the collection of materials that were already available. Explanations of the process are available on a number of levels of sophistication. There are: two-page introductions to the process, an instructional film, a somewhat more elaborate description of the process in the Second Annual Report, and a self-instructional module of several hundred pages. Copies of all the instruments used in the process are available as well.

The process already had been thoroughly broken down into smaller components; introductory materials, data collection instruments, data analysis techniques, and teaching improvement strategies. The process is reasonably well grounded in theory and easily understandable rationales have been written. In sum, it appears reasonable to say that the process
is not difficult to understand, particularly for those in higher education.

The divisibility of the Clinic process was the next problem, and again the only problem was one of documentation; the process is inherently divisible. Not only can small portions of the process be tried initially by an institution; the process need be tried by only a part of that institution. Small parts of it may be tried initially (e.g., the TABS questionnaire, microteaching, the concept of a teaching improvement specialist, some of the teaching improvement strategies, etc.) The full list is in the Appendix. In addition, an institution could conceivably begin by committing a staff or perhaps two (one teaching improvement specialist and one part-time secretary), and a relatively small budget for duplication and perhaps some computer time. The number of faculty clients who could be served would be small, but it is certainly possible to have this sort of arrangement.

Another problem was one of documenting the observability of the Clinic. It seemed obvious that the best way for a potential adopter to observe the Clinic process was to come to the Clinic itself in Amherst, and, in fact, visitors were received on a regular basis. On many occasions, Clinic personnel went to other institutions to give workshops demonstrating the process. In addition, a number of other institutions\(^1\) have established Clinic-style agencies that are more

\(^1\)McGill University, Montreal, Canada; Monterrey Institute of Technology, Monterrey, Mexico; Central YMCA College, Chicago; University of Como, S.W., Australia; the University of Connecticut; and the University of Rhode Island. Others are planned as a result of the 1975 Summer Institute.
readily available to neighboring institutions than is the University of Massachusetts Clinic.

During the process of documenting the observability dimension of the Clinic, it became apparent that it was reasonable to suggest that concrete evidence of the value of the process could be used as substitute for direct observability (although, of course, direct observability is to be preferred). A worthwhile activity, then, would be to collect evidence we had that the process was of value.

As it turned out, the chief source of evidence we had available was a very high level of faculty-client satisfaction with the process and the results of the process. This is not a substitute for, say, hard data on increased student achievement; however, it is important and cannot be ignored.

A further part of step four involved a decision as to what support services can be made available, i.e., what would the Clinic do for other agencies that adopted the Clinic model. This step was not done, because the Clinic had few funds available for this, and there were few useful support services that could be provided without cost. The performance of the above steps thus seemed futile. Consultants could be sent on request, but their expenses, and sometimes a reasonable honorarium, would have to be paid by the client. Clients could, of course, visit the Clinic, where reasonable help (i.e.g., consulting with members of the staff for a day or two, observation of the process in operation here, etc.) would be provided at no charge. Generally speaking, reasonable quantities of materials were provided free of charge.
At any rate, the support services the Clinic could offer could not possibly be of assistance beyond showing the client the Clinic process and how it has worked here at the University of Massachusetts. The problems clients would face in the areas of gaining the trust of their faculty and administrations are largely beyond the scope of the Clinic to solve. All the Clinic could do would be to provide for use, by other agencies, evidence of faculty satisfaction with the process and whatever other evidence exists of the value of the process. The following step has been added as a result of the problems cited in the previous paragraphs:

III.H.1. Determine the resources available to provide support services.

Step III.I. is a new step

III.I. If possible, try to design/adapt the product to make its positive effects as visible as possible as quickly as possible, and/or suggest possible measurement techniques to determine the effect.
This step was included because it became apparent that one of the appealing features of the Clinic was the fact that the results of its implementation are typically visible after at most six weeks, and often less than that. This is so often a problem in education that all possible steps should be taken to assure that some evidence of positive effect is visible at a relatively early stage.

The following substeps are suggested, although they were not derived from this specific field test, but from the further application of Step VII of Metamethodology.

III.I.1. Before the first successful adoption of the product:

a. Determine likely early indicators that the product is at least beginning to meet the need it is supposed to

(1) If possible, draw on experience with similar products adopted previously

(2) If (1) is not possible, a thorough familiarity with the product and the target group should allow for a reasonable estimate as to what should be happening in the early stages if the process is proceeding as it should. For example, in the case of the Clinic, faculty satisfaction is not empirical proof of the
value of the process; it is very likely an early indicator of success, however.

b. Devise measurement techniques and tools for these criteria and rationales for them
c. Be prepared to train the adopter(s) of the product in the use of these tools and techniques

2. Document the adoption and implementation processes, as much as resources permit, with several persons or groups

3. After the first successful adoption of the product:
   a. Use the documentation of successful adoptions to determine criteria for early indications of success
   b. Devise measurement techniques and tools for these criteria, along with appropriate rationales for them
   c. Be prepared to train subsequent adopter(s) of the product in the use of these tools and techniques

At this stage, it seemed logical to undertake to make other colleges and universities aware of the Clinic's existence and its purposes. This process was coordinated by the writer, but begun on the initiative of several senior staff members. It resulted in a new step being added to the methodology, which is:

IV. Develop a plan to create as broad an awareness of the product as possible.
Since this is a new step, it is helpful to point out that there is considerable support in the literature for this kind of activity.

There is much evidence that the decision to adopt is not one decision, but a series of decisions. Many (e.g., Rogers (1971); Coleman, Katz and Menzel (1966); Bela, Rogers and Bohlen (1957); and others) label these stages (1) awareness, (2) interest, (3) evaluation, (4) trial and (5) adoption. Lavidge and Steiner, (1957), whose perspective is that of business-world marketing, label these stages, (1) awareness, (2) knowledge, (3) liking, (4) preference, (5) conviction, and (6) purchase. Either way, the best evidence indicates that there exists a first, at least somewhat separate, stage in the adoption process that can be labeled "awareness". At this point the consumer becomes aware that the product exists and, in a general way, what it is supposed to do.

There is considerable evidence that mass media and "cosmopolite" (i.e., outside the adopter's own system) sources are the most effective for use in an awareness campaign. Research conducted by Wilkening (1956), Copp et al. (1958), and Coleman, Katz and Menzel (1966), all support this position.

It would appear to be the most advisable course of action, then, to use relevant mass media to make the consumer aware of the product. (The disseminator does not really have to worry about the "cosmopolite" dimension, as this condition is almost always automatically met). Mass media will be different for different products and consumers. For a new industrial product, it might be television. In education exposure in the appropriate well-respected journals should be a valuable
tool; in addition to making potential consumers aware of the product, publication in leading journals lends increased credibility to the product.

With regard to the Clinic itself, the staff members took every opportunity to promote the Clinic though often in an informal fashion. Also, a number of formal steps were taken this year to create a broader awareness of the Clinic's operations. The first international Conference of Teaching Improvement, co-sponsored by the W.K. Kellogg Foundation and UNESCO, was held at the University of Massachusetts with the Clinic as host organization. Post-conference correspondence left no doubt whatever that the reputation of the Clinic had grown considerably as a result of sponsoring the conference.

Other activities were undertaken. For example, numerous papers have been published and papers have been presented at regional and national meetings. Also, a descriptive brochure was drafted to describe the background, purposes, and unique features of the Clinic. The brochure was mailed to approximately 1,000 institutions around the country. Response to this brochure proved extremely encouraging, as over two hundred persons and institutions requested further information. Brief evaluation forms (see Appendix), designed to give a very rough idea of the other agency's view of the potential usefulness of the Clinic materials, were mailed with the materials, and respondents indicate nearly unanimously that they found the materials quite useful. In summary, the following steps reflect what was done:
<table>
<thead>
<tr>
<th>IV.A.</th>
<th>Identify the resources available for this step</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.</td>
<td>Identify diverse groups of persons or institutions likely to have some reasonable interest in the product</td>
</tr>
<tr>
<td>C.</td>
<td>Identify media appropriate for communication with these diverse groups. Four criteria for selection could be: 1. Number of persons or groups that can be reached 2. Likelihood that they will reach persons or groups interested in the product 3. Credibility of the media 4. Cost of using the media</td>
</tr>
<tr>
<td>D.</td>
<td>Devise general descriptions of the product for use in these media that make at least some mention of some of the product attributes discussed in major process III, (if the product has those attributes)</td>
</tr>
</tbody>
</table>

The field test revealed that this step should be considered in a serious way just as early in the dissemination as is feasible. The benefits from the International Conference, conducted early in the year, proved to be significant, at least with regard to promoting an awareness of the Clinic and to general purposes and procedures.

IV. Identify general populations that will benefit from the adoption of the product (potential adopters).
This step was divided into two steps in draft two of the methodology. Changes were made on the basis of (1) the field test and (2) the application of Step VII of Metamethodology.

The identification of a general target group was not left to the disseminator. The Clinic senior staff themselves identified other instructional development agencies as the target group without consulting me. This part of the field test revealed clearly that selection of the group upon which the focus of dissemination will rest is a decision that the product developer(s) may well wish to reserve for themselves.

A procedure that will allow the product developer this choice is the Coffing-Hutchinson Needs Analysis Methodology. If used here, it is recommended that some of the more sophisticated procedures be applied. This methodology has been discussed previously.

Step V of draft two becomes:

V. Conduct a needs assessment to determine general target populations.
   
   A. The more sophisticated procedures contained in the Coffing-Hutchinson Needs Analysis Methodology are recommended

The remainder of Step V of draft one was performed with almost
no available resources. As a result, the reorganization/changes on the rest of Step V of draft one are based primarily on Step VII of Metamethodology.

VI. Among those persons or groups identified in Step V, identify those most likely to receive the product most favorably

A. Identify, as far as possible, those subgroups on whom the product would have seriously detrimental side effects, and leave them out of the dissemination effort.

1. If at all possible, conduct at least a small field test of the product. This is strongly recommended, as harmful side effects are often very difficult to anticipate

a. If the product is made divisible -- as is suggested in Step IV -- resources for a field test may not have to be large at all

2. If resources are smaller, judgment will have to be made on indirect evidence

2If nothing else, it was certainly learned here that one person, working on a relatively small dissemination budget, can do very little -- at least with regard to some components of an effective dissemination effort. Especially with a major product and a large target audience, very large amounts of time and money are almost a prerequisite.
a. Demonstrate if possible (or explain, if not) the product to as many in the population who would be affected by the product and obtain their reaction

b. Demonstrate if possible (or explain) the product to a few experts in the area and obtain their reaction

c. Data from Step IV.B. may well be helpful here

B. Identify those groups for whom the product would have the greatest relative advantage over what is currently being used to fill the need.

1. Identify groups that have nothing currently meeting the need. These would be first priority on the list.

2. Identify other groups for which the product represents an increased relative advantage. Components of relative advantage include: greater effectiveness, more efficiency, lower cost, higher compatibility with the system.

There are no doubt many others.

C. Among the remaining populations identify subgroups for whom the product fills a relatively high-priority need (This step can typically only be done in very high resource situations, when the general needs of the groups are known or can be identified)
It is interesting to point out that some of the substeps above have considerable support in the dissemination literature.

Relative advantage (Substep B.2.) is the degree to which the product will likely be adopted more quickly by the groups for which it represents the highest relative advantage. Griliches (1957), and Tully et al. (1964), achieved results, in rural sociology studies, that support the concept.

Mansfield (1968), presents an interesting example from business and industry. He has developed a model to predict the rate of "imitation" of innovative procedures in that field, and he notes that "the model is built largely around one hypothesis -- the probability that a firm will introduce a new technique in an increasing function of the proportion of firms already using it and the profitability of doing so, but a decreasing function of the size of the investment required. . . When confronted with data for twelve innovations, this model seems to standup surprisingly well. As expected, the rate of imitation tended to be faster for innovations that were more profitable and required relatively small investments p. 153."

Step A also has some support in the literature. Examples abound in human experience of unexpected side effects destroying the intended effects of new products and processes. Mead (1953), provides an account of just how devastating side effects can be:

In Africa on the other hand, there had been no precedent for the long absences of the men when industrialization came, with its demand and lure for men. Division of labour had been basic to family life and agricultural work, so that these were . . . disturbed. The loss of production was not balanced by
the wages the men earned, since these usually were spent to support the man while away, or to buy a few gifts to bring back, so the standard of living deteriorated. Without the men, the home lost its place as an educational unit, and there was no way of passing on the values of the society to the growing boy. With the dislocation in family life, the displacement of authority, came demoralization. Young girls, unwilling to stay in villages without men, followed the men to the cities, where they often became prostitutes. p. 265

V. Identify, among the designated potential adopters, those subgroups most likely to react favorably to the product and focus communication upon them.

The major process remains the same, but as a result of the field test many of the substeps have been revised. The first new substep (B) was added because (1) the disseminator must have a very clear idea of the nature and composition of the decision audiences (those who have actual decision-making power) with whom he/she must work initially; and (2) ideally, at least all three groups should be brought into the final adoption decision in some way. Actually, as long as the disseminator can be sure as to the decision audience, the exact determination of the other two groups can be put off until later if absolutely necessary. In the Clinic field test, contacts were typically made with the director of the other agency, unless perhaps a personal contact with whom one of the staff was familiar was available. The steps added are as follows:

B. Identify, within the population, the target audiences (on whom the product is designed to have an effect), the decision audiences (who decide on adoption/rejection) and the adoption audiences (who actually use the innovation).
C. Determine those in the decision audiences who are the early adopters.

Early adopters among faculty development agencies were not determined, basically for two reasons: (1) faculty development as a topic of major importance is a relatively new one, and thus most of those willing to commit their time and money to it are, in a very real way, innovators; and (2) most agencies had not been in existence long enough to establish with any kind of accuracy any sort of prior innovative behavior. Given these two conditions it did not seem reasonable to attempt to determine the "most innovative" faculty development agencies. As a result, the field test did not add to the steps. The steps were expanded and modified, however, on the basis of the application of Step VII of Metamethodology. They now are:

C.1. If resources are relatively large:
   a. Identify products used by members of the population that are similar to the product to be disseminated
   b. Determine those in the population who have a record of early adoption of those products
      1. Examine available records of the adoption of those products
      2. Talk with those persons who use those products
3. Talk with others connected with the adoption of those products

4. Talk with the developers of those products

C.2. If resources are relatively small, or if no similar products are in use in the population, early adopters can quite often be identified as having the following characteristics: higher social status (e.g., education level, salary, "reputation"); size of adoption unit; general innovative behavior (with a variety of products); and relatively extensive use of mass media. The following steps are recommended as being possibly useful:

a. Identify potential adopters with relatively higher social status

b. Identify potential adopters with larger size units

c. Identify potential adopters whose general adoptive behavior shows a trend toward innovation

d. Identify potential adopters who appear to make relatively more use of mass media.

The above may not always be practical or useful all the time, but at this point it appears that they often will be
In the Clinic field test, resources for the determination of opinion leaders were relatively small; moreover, it somehow did not seem appropriate or potentially fruitful to administer a sociometric device to the directors of the various faculty development institutes. The problem also existed that most such organizations are relatively new, and there has been relatively little time for natural patterns of opinion leadership to establish themselves. It was difficult, then, to reliably establish opinion leaders among instructional development agencies, although via conversations with the senior staff an informal judgment was made. As a result of these meetings, and also because of further reading, the steps were revised somewhat and now read as follows:

D.1. If resources are relatively large, opinion leadership may be measured by using certain sociometric devices (e.g., questionnaires that ask, "name the three colleagues of whom you would be most likely to ask advice about (whatever the product is)."

2. If resources are relatively small:
   a. More crude measures may be used, e.g., "reputation" or "prestige" as judged by local experts. Opinion leaders tend to have higher social status
b. Opinion leaders tend to be more innovative.

Identification of those generally innovative members of the group (as may have been accomplished in Step VII) lead to the identification of many opinion leaders.

Step E. was added simply as a common sense measure:

E. Prioritize the final list of persons/groups to be contacted. Criteria should include innovativeness and/or degree of opinion, leadership.

If resources are limited, criteria should include accessibility.

Steps D and E (in draft one) involve making personal contact with those persons or groups identified in previous steps, and at this point, the test of the methodology ran into serious problems. As had been noted earlier in this chapter, a considerable amount of dissemination had been done -- partly on a systematic partly on an ad hoc basis -- during the first two years of the Clinic's operation. Contact had already been made with many of the agencies; much face-to-face "selling" of the teaching improvement model had been done. In addition, the Director felt that given the fact that remaining dissemination resources were limited, they would best be spent making a lower-level contact with more agencies than more intensive contact with relatively fewer agencies.
For all of these reasons, it was not possible to formally field test substeps D and E; however, other procedures seemed reasonable. Since a considerable amount of face-to-face dissemination has been done, often with considerable success, Michael Melnik and Glenn Erickson, key Clinic staff members, were interviewed, and information collected from them was used to revise the steps thus (their detailed comments are contained in the Appendix):
VIII. Make contact with those in the final prioritized list just generated in the previous step.

A. Prepare for each specific meeting

1. Learn as much as possible about the specific client or client group in terms of:
   a. the purpose and basic operations of the institution
   b. the resources of the institution
   c. level of sophistication (especially with regard to the product)
   d. Most likely apprehensions about adoption of the product (e.g., is there hard evidence of the usefulness of the product; how will adoption affect the status of the adopters; how much will it cost; how will the product fit with the particular institution, etc.)

2. Be sure to be just as knowledgeable about the product as possible, especially including:
   a. those aspects of the product determined in Step IV
   b. how the product would fit, very specifically, into the particular institution to be contacted

B. Provide the client with ample opportunity to discuss his institution. This will (1) give the disseminator
more information about the client and (2) demonstrate client orientation which as been demonstrated to be directly related to success in dissemination

C. Discuss your role in disseminating the product

D. Explain the product fully, and describe how it will meet the client's needs

1. Remain somewhat low-key in the presentation, i.e., avoid the hard-sell or oversell. This is particularly important in the academic community

2. Discuss the nature and purpose of the product and how you believe it could meet one or more of the client's needs

3. Illustrate your perception of what the total impact on the client's system will be, describing both possible and negative effects

4. Demonstrate if possible -- or explain, if not -- the characteristics of the product that were determined or developed in Step IV

   a. The cost of the product

   b. How the product can be observed in use (if it can)

   c. How the product can be tried on a limited basis (if it can)
d. Its compatibility, i.e., how well it fits the client's system or institution

e. The support services available for use if the product is adopted

5. If the decision-maker's reaction to the product is favorable, encourage him/her to give other persons/groups at least some input into the final decision

a. Offer to make presentations to the various persons or groups (preferably separate, so the presentation can be more specifically tailored)

6. If the decision-maker(s) refuse the offer, proceed to Step X. Otherwise, go to the next step

7. Presentations to other persons and/or groups should be made using the same procedures as outlined for the decision-makers

Again, it is interesting to point out that some literature support exists for a number of the new substeps above.

Rogers and Svenning (1969), offer an interesting discussion of audience analysis:

After designating the target, decision, and adoption audiences, an analysis of these audiences will facilitate strategies for achieving desired results. The principle "know your audience" rings true as
ever. Understanding audience characteristics, attitude about change, and attitude toward pending innovations, enables change agents to devise more efficient strategies to secure innovation adoption. A change manager, knowing that only 20 per cent of the teachers in a school favor the adoption of independent study, will design a strategy heavily weighted with information and persuasion activities. If 80 per cent of the teachers in a system already favor the adoption of independent study, a change manager will use only light persuasion activities. In this case, emphasis in the change campaign will focus on implementation and adoption activities.

Awareness of the communication behaviors of his audience will guide the change manager in selecting communication strategies most useful for securing efficient change. For example, if a change manager knows that the teachers gather for coffee, he might use these informal communication situations to stimulate discussion about independent study.

Adoption of an innovation may require changes in attitudes held by the audience. If the change manager attempts to secure adoption of the innovation without first changing antagonistic underlying attitudes, he may never achieve success. Knowing the characteristics and temper of his audience gives the change manager insight in selecting preliminary steps to be taken before the adoption audience is requested to accept and use the advocated innovation.

In summary, the change manager's knowledge of his audience determines which communication and diffusion principles must be employed in change strategies to secure desired results [p. 66, 69].

Rogers and Shoemaker (1971), discuss the importance of this notion that all persons involved in the use of the product should be included in the decision to adopt.

We should remember that although the adoption unit may conform to the executive decision overtly, it may reject the decision attitudinally. This may lead to consequent disruptions in organizational procedures or eventual discontinuance of the innovation. This attitude toward an innovation and satisfaction with the decision are two important dependent variables; the adoption unit's participation in the decision stated is a predictor of both acceptance and satisfaction [p. 309].

If the client wishes to maximize the likelihood of acceptance and continued use of the product by all those involved, then, he/she
should involve them in the final decision as much as possible. If the client accepts this notion, the disseminator should offer to make a presentation on the product to those other persons or groups, either alone or in a session including the client. Such presentations require as much careful preparation as did the initial presentation.

VI. If the client(s) decide(s) to adopt, make the product, including all support services, available to him/her.

A number of institutions have adopted -- obviously, with varying adaptations and with different levels of resource commitment -- the Clinic's teaching improvement model. These include: The Universities of Connecticut, Rhode Island, and New Hampshire, McGill University, Monterrey (Mexico) Institute of Technology, Bar Ilan University in Israel, University of Como, S.W., Australia, and a number of schools on the secondary and primary level.

In addition, a number of institutions have indicated that they will attend the Clinic's Summer Institute, at a cost (including room and board) of $1100. Expenditures of this level of funds indicate a strong likelihood that at least a minimal adaptation of the Clinic process will be instituted. Finally, hundreds of institutions sent for the Working Materials package the staff has assembled. Follow-ups are being conducted currently on these institutions to determine if (and how) they have made use of the materials.

VII. If resources for this step remain, implement the "2-step model", i.e., help the opinion leaders disseminate the product to others in the population.
Resources for the implementation of this step were simply not available. The step would require much more time and effort from the disseminator than was available. It would also require a great deal of money, which also was not available.

VIII. Evaluate the results of the adoption/rejection.

The step was not performed as written in this case; an adaptation of the Fortune-Hutchinson evaluation methodology was necessary. A correct application of the methodology would have taken more time than was available, and a modification was necessary.

A reasonable alternative, which took relatively little time and which (given the resources) appeared likely to yield reasonably accurate results was to talk to the Director and obtain a statement of his goals for institutions that adopted all or part of the Clinic model (i.e., what would constitute a "successful adoption"). A survey was designed to study the achievement of the goals, but returns were extremely disappointing.

IX. Recycle through Steps IV-IX until the resources have run out or until the product is completely disseminated

Obviously, the resources did not permit recycling.

X. Evaluate the success of the methodology and revise where appropriate

It proved impossible to evaluate the success of the methodology as a result of this field test. Most of the problems were attributable to the fact that a good deal of the dissemination work took place during the first two years of operation. In addition, even this year, senior
staff and other Clinic personnel visited a great many institutions all over the world and received a great many visitors from other institutions. Although the main purpose was most often for something other than dissemination, no doubt some such activity did take place at many of the meetings. Coordination and recording of all these activities was just not feasible.

It is true that many of the activities not coordinated or conducted by the writer would have been conducted pretty much the same way if the methodology had been followed. It is impossible, however, to determine the degree to which this is true.

Some criteria are suggested for evaluation of the overall dissemination effort that fall generally within degree of dissemination of the product and degree to which the product seems to meet a need. They are:

1. Number of visitors received and the results of their visits (if follow-up had been done; most often it was not)
2. Number of requests for Clinic information. Evaluation of its usefulness or potential usefulness of other institutions (by those institutions) and/or use to which materials have been put
3. Number of other institutions which have adopted clinic-style agencies or who have a firm commitment to do so
4. Number of schools that have requested demonstrations of the clinic model or a workshop at their own institution
5. Number attending the 1975 Summer Institute

Some of these are due to methodology-related activities to a reasonably large degree, but some are related only to a small degree. It is, therefore, quite impossible to make a real judgment as to the overall effectiveness of the methodology. For this field test, the only evaluation will have to be that already described throughout this chapter, i.e., an evaluation of how well each step worked and resulting revisions. Through the application of Step VII of Meta-methodology, the following steps were added:
A. Determine the extent to which the product was successfully disseminated. (Several criteria can be used, depending partially on the nature of the dissemination effort.)

1. Cost-benefit criteria
   a. Determine resources spent in disseminating the product
   b. Determine the number of people or groups who have adopted the product
   c. Compare a. and b.

2. Extent to which the product is disseminated
   a. Determine the number of possible adopters contacted
   b. Determine the number of people/groups adopting
   c. Compare a. and b.

   (This can be a problem. The nature of innovation adoption is such that it is slow at first, then rapidly accelerating, and finally slowing down again. Diffusion of any innovation can take considerable time, making evaluation of the effort difficult)

3. Extent to which needs are met

4. A combination of the above, or some other criteria agreeable both to the disseminator and product developer
This section has been written to provide a description of the reasons the various changes were made. The next section includes the revised draft (draft two) of the dissemination methodology.

4.4 Dissemination Methodology: Draft II

Purpose: To meet needs through the dissemination of products

Case I: The dissemination if working for a product developer
(a special case -- the disseminator is the product developer)

Case II: The disseminator is working as an independent change agent
(i.e., his remuneration would come from something like a university salary; dissemination is not his only major concern; rather, one of a number of interests)

Case III: The disseminator is working for a funded agency whose function is to disseminate products (for example, the Far West Laboratory for Educational Research and Development)

Case IV: The disseminator is working for a consumer or group of consumers. (e.g., a school system)

----------------------------------

1. Negotiate a contract with a product developer interested in dissemination.

   A. Determine the person or group whose decision-making authority is needed for the dissemination effort.

   B. Ask to negotiate a contract with the contractor(s). If necessary, deal with someone authorized to represent them.

   C. Be sure that decisions made about the contract are made using the person or group's normal decision-making procedure.

   D. Identify the product to be disseminated.
E. Identify the resources available for the dissemination effort.

1. Develop at least a general plan, within the methodology but specific to the product, that can be done using relatively low resources (for example, for $1000 or less).
   a. Decide which steps are the most crucial to follow closely, even given low resources.
   b. Decide which steps can be eliminated with the least possible damage, or which can be given very low resources.
   c. Devise the product-specific plan according to the revised submethodology.

2. Develop at least a general plan, within the methodology but specific to the product, that can be done using a middle level of resources (for example, between $1,000 and $10,000).
   A. Decide whether any of the steps can be accomplished using few resources and which require considerable resources, for a plan of middle-level effectiveness. Allocate the resources, in a very general way, accordingly.
   b. Devise the product-specific plan according to the revised submethodology.

3. Develop at least a general plan, within the methodology but specific to the product, that can be done given a relatively high level of resources. (For example, over $10,000). Each step should be given at least adequate resources in this plan.

F. Determine what will be satisfactory to the product developer with regard to consumers adoption of the product.

1. If the product is complex, identify its component parts.

2. Determine whether any of these must be adopted without significant adaptation in order that the product developer be satisfied.

3. Determine at least some reasonable possible adaptations and check their acceptability with the product developer.
G. Prepare the contract for the product developer's approval. The contract should specify those things determined in the previous three steps: (1) the product to be disseminated; (2) the resources available; and (3) the criteria for success.

II. Plan the implementation of the rest of the methodology.

A. Allocate the resources according to the percentages on the resource allocation chart.

B. Examine the resulting allocation in light of the nature of the product and the dissemination effort, and make adjustments if necessary.

C. Be prepared to shift the resources allocation as the dissemination progresses. The allocation should be given at least some consideration after each major step is completed.
### Fig. 1 RESOURCE ALLOCATION CHART

<table>
<thead>
<tr>
<th>Step</th>
<th>Percentage of resources allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>Product design/adaptation 5</td>
</tr>
<tr>
<td>IV</td>
<td>Conduct campaign to create awareness of product 10</td>
</tr>
<tr>
<td>V</td>
<td>Conduct needs assessment to determine general target populations 10</td>
</tr>
<tr>
<td>VI</td>
<td>Determination of groups most likely to receive product favorably 10</td>
</tr>
<tr>
<td>VII</td>
<td>Determination of innovators and opinion leaders 10</td>
</tr>
<tr>
<td>VIII</td>
<td>Making contact with initial clients 15</td>
</tr>
<tr>
<td>IX</td>
<td>Making product and support services available 5</td>
</tr>
<tr>
<td>X</td>
<td>Use of innovators/opinion leaders in the rest of the dissemination 25</td>
</tr>
<tr>
<td>XI</td>
<td>Evaluation of adoption/rejection 5</td>
</tr>
<tr>
<td>XII</td>
<td>Evaluation of success of the methodology 5</td>
</tr>
</tbody>
</table>

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III Have the product developer design -- or adapt, if the product is already designed -- the product to be as amenable to dissemination as possible, without changing the character of the product.

A. Determine the resources available for this step

B. Make an initial judgment as to what general populations will benefit from the adoption of the product.
1. Implement a needs analysis methodology
   a. The Coffing-Hutchinson methodology is recommended, with the product developer as the decision-maker.

C. Make the product as compatible with the potential adopter's values, culture, and/or traditions as possible.

1. Determine whether or not the product is by nature adaptable to a variety of traditions, values, practices, etc. If it is not, go to Step III.D.

2. Determine the likely effect of the product on the consumer's values, traditions or practices.
   a. If resources permit, conduct a small-scale field test of the product, using if possible a small random sample of the group or one of the groups, determined in Step III.B. This is by far the best procedure, since side effects are often very important and frequently quite difficult to predict.

   (1) As far as possible, before the field test, make that feature of the product that meets the need the only thing about that product that is different from what the target group is accustomed to or familiar with. For example, support a tailored testing program is the product of concern. The tailored tests should be given under the same conditions, by the same persons, in the same classrooms, and graded by the teachers (if that is customary). All these things reduce the threat that it is something somehow "alien." A programmed instruction unit should be given in the regular classroom, administered if possible by the regular classroom teacher, etc. Again, only what must be different to insure that the need be met should be different.

   b. If resources are insufficient for even a small field test, the views of people whose systems, practices, etc., will likely be affected should
be solicited. (e.g., if it will affect the schools, some teachers, administrators, and students should be given the opportunity to react to the product).

c. If resources are extremely small, available literature on the specific values of the group to be targeted, or the opinions of some experts, will be of some help. In other cases, they may be used as supplements to a and b above.

3. If few common values/traditions/practices are common, or if resources were not sufficient to determine them, make the product as adaptable to a variety of situations as possible.

D. Keep the cost of the product as low as possible

1. If product costs nothing or almost nothing (e.g., a research report advocating some variety of behavior change), move to Step III.E.

2. Break the product down into component parts if possible

3. Determine which of the components are essential to the product if it is to accomplish the purpose for which it was designed

4. Eliminate those components found to be non-essential in Step 3

5. Continue to break down the components until it is relatively easy to determine the lowest possible cost for each. The total will then be the lowest possible cost for the product

6. Document cost information for use in Step VIII.

E. Reduce the complexity of the product as much as possible

1. Steps III.D.2. through III.D.4. will have yielded components of the product. If the components are broken down as far as possible, go to Step 3

2. Break down the components into their most basic subcomponents
3. If necessary, provide explanation of the final list of components of the product

4. Document complexity information for use in Step VIII

F. Make the product "divisible" so that it can be tried initially on a small scale

1. Determine whether the product is divisible or can be made divisible without sacrificing its ability to accomplish its purpose. If it is not, or cannot be made divisible, go to Step III.G.

2. Determine how the product can be tried on a limited basis
   a. Determine whether only part of the product need be tried
   b. Determine whether only a part of the adopting population (given that it is made up of more than one person) needs to try the product to give it a fair trial
   c. Document all possible ways the product can be made divisible for use in Step VIII

G. Make the product observable, if possible, so that a potential adopter can see it in operation before he makes his decision

1. Determine whether any institutions already use the product

2. Determine whether the product developer or the disseminator can demonstrate the product

3. Document observability for use in Step VIII

H. Devise appropriate support services which the adopter may avail himself of after adoption of the product

1. Determine the resources available to provide support services

2. Determine potential difficulties adopters can encounter when using the product
3. Determine which of these can be eliminated, or at least reduced, by providing support services to the adopter.

4. Plan specifically support services to reduce problems identified in Step 3 in accordance with available resources.

I. If possible, try to design/adapt the product to make its positive effects as visible as possible, as quickly as possible, and/or suggest possible measurement techniques to determine the effect.

1. Before the first successful adoption of the product:
   a. Determine likely early indicators that the product is at least beginning to meet the need it is supposed to
      (1) If possible, draw on experience with similar products adopted previously
      (2) If (1) is not possible, a thorough familiarity with the product and the target group should allow for a reasonable estimate as to what should be happening in the early stages if the process is proceeding as it should. For example, in the case of the Clinic, faculty satisfaction is not empirical proof of the value of the process; it very likely is an early indicator of success, however
   b. Divide measurement techniques and tools for these criteria and rationales for them
   c. Be prepared to train the adopter(s) of the product in the use of these tools and techniques

2. Document the adoption and implementation processes, as much as resources permit, with several persons or groups

3. After the first successful adoption of the product:
   a. Use the documentation of successful adoptions to determine criteria for early indications of success
   b. Devise measurement techniques and tools for these criteria, along with appropriate rationale for them
c. Be prepared to train subsequent adopter(s) of the product in the use of these tools and techniques

IV. Develop a plan to create as broad an awareness of the product as possible

A. Identify the resources available for this step

B. Identify broad groups of persons or institutions likely to have some reasonable interest in the product

C. Identify media appropriate for communication with these broad groups. The criteria for selection could be:
   1. Number of persons or groups that can be reached
   2. Likelihood that these persons or groups will be interested in the product
   3. Credibility of the media
   4. Cost of using the media

D. Devise general descriptions of the product for use in these media that make at least some mention of some of the product attributes discussed in major process IV, (if the product has those attributes).

V. Conduct a needs analysis to identify potential target groups

A. The more sophisticated procedures contained in the Coffing-Hutchinson Needs Analysis Methodology are recommended

VI. Among those persons or groups identified in Step V, identify those most likely to receive the product most favorably.

A. Identify, as far as possible, those subgroups on whom the product would have seriously detrimental side effects, and leave them out of the dissemination effort

1. If at all possible, conduct at least a small field test of the product. This is strongly recommended, as harmful side effects are often very difficult to anticipate
a. If the product is made divisible -- as is suggested in Step IV -- resources for a field test may not have to be large at all

2. If resources are smaller, judgment will have to be made on indirect evidence

a. Demonstrate if possible (or explain, if not) the product to as many in the population who would be affected by the product and obtain their reaction

b. Demonstrate if possible (or explain) the product to a few experts in the area and obtain their reaction

c. Data from Step III.B. may well be helpful here

B. Identify those groups for whom the product would have the greatest relative advantage over what is currently being used to fill the need

1. Identify groups that have nothing currently meeting the need. These would be first priority on the list

2. Identify other groups for which the product represents an increased relative advantage. Components of relative advantage include: greater effectiveness, more efficiency, lower cost, higher compatibility with the system. There are no doubt many others

C. Among the remaining populations, identify subgroups for whom the product fills a relatively high-priority need

VII. Identify, among the designated potential adopters, those most likely to react favorably to the product and focus communication on them

A. Determine the resources available for this step

B. Identify, within the population, the target audiences (on whom the product is designed to have an effect), the decision audiences (who decide on adoption/rejection) and the adoption audiences (who actually use the innovation)
C. Determine those in the decision audiences who are the early adopters

1. If resources are relatively large:
   a. Identify products used by members of the population that are similar to the product to be disseminated
   b. Determine those in the population who have a record of early adoption of those products
      1. Examine available records of the adoption of those products
      2. Talk with those persons who use those products
      3. Talk with others connected with the adoption of those products
      4. Talk with the developers of those products

2. If resources are relatively small, or if no similar products are in use in the population, early adopters can quite often be identified as having the following characteristics: Higher social status (e.g., education level, salary, "reputation"); size of adoption unit; general innovative behavior (with a variety of products); and relatively extensive use of mass media. The following steps are recommended as being possibly useful:
   a. Identify potential adopters with relatively higher social status
   b. Identify potential adopters with larger size units
   c. Identify potential adopters whose general adoptive behavior shows a trend toward innovations
   d. Identify potential adopters who appear to make relatively more use of mass media. The above may not always be practical or useful all the time, but at this point it appears that they often will be.
D. Determine, as far as possible, the opinion leaders in the population of concern

1. If resources are relatively large, opinion leadership may be measured by using certain sociometric devices (e.g., questionnaires that ask, "name the three colleagues of whom you would most likely ask advice about (whatever the product is)"

2. If resources are relatively small:
   a. More crude measures may be used, e.g., "reputation" or "prestige" as judged by local experts. Opinion leaders tend to have higher social status
   b. Opinion leaders tend to be more innovative. Identification of those generally innovative members of the group (as may have been accomplished in Step VI) will lead to the identification of many opinion leaders

E. Prioritize the final list of persons/groups to be contacted. Criteria should include innovativeness and/or degree of opinion, leadership. If resources are limited criteria should include accessibility

VIII. Make contact with those in the final prioritized list generated in Step VII

A. Prepare for each specific meeting

1. Learn as much as possible about the specific client or client group in terms of:
   a. The purpose and basic operation of the institution
   b. The resources of the institution
   c. Level of sophistication (especially with regard to the product)
   d. Most likely apprehensions about adoption of the product (e.g., is there hard evidence of the usefulness of the product; how will adoption affect the status of the adopters; how much will it cost; how will the product fit with the particular institution, etc.)
2. Be sure to be just as knowledgeable about the product as possible, especially including:
   a. Those aspects of the product determined in Step III
   b. How the product would fit, very specifically, into the particular institution to be contacted

B. Provide the client with ample opportunity to discuss his institution. This will (1) give the disseminator more information about the client and (2) demonstrate client orientation which has been demonstrated to be directly related to success in dissemination

C. Discuss your role in disseminating the product

D. Explain the product fully, and describe how it will meet the client's needs

1. Remain somewhat low-key in the presentation, i.e., avoid the hard-sell or oversell. This is particularly important in the academic community
2. Discuss the nature and purpose of the product, and how you believe it could meet one or more of the client's needs
3. Illustrate your perception of what the total impact on the client's system will be, describing both possible and negative effects
4. Demonstrate if possible -- or explain, if not -- the characteristics of the product that were determined or developed in Step IV
   a. The cost of the product
   b. How the product can be observed in use (if it can)
   c. How the product can be tried on a limited basis (if it can)
   d. Its compatibility, i.e., how well it fits the client's system or institution
e. The support services available for use if
the product is adopted

5. If the decision-maker's reaction to the product
is favorable, encourage him/her to give other
person/groups at least some input into the
final decision

a. Offer to make presentations to the various
persons or groups (preferably separate, so
the presentation can be more specifically
tailored)

6. If the decision-maker(s) refuse the offer, proceed
to Step IX. Otherwise, go to the next step

7. Presentations to other persons and/or groups should
be made using the same procedures as outlined for
the decision-makers

IX. If resources for this step remain, implement the "2-step
model", i.e., help the opinion leaders disseminate the pro-
duct to others in the population

A. Determine whether the opinion leader wants to help in
the dissemination effort

B. Determine whether the opinion leader is to be trusted
with the resources available for this step. If not, go to Step X

C. Determine how much and what kinds of resources the
opinion leader needs

D. Make the resources available to the opinion leader

X. Evaluate the results of the adoption/rejection

A. The Fortune-Hutchinson evaluation methodology is
recommended

XI. Proceed through Steps III-S until the product is completely
disseminated, or until resources run out

XII. Evaluate the success of the methodology and revise where
appropriate

A. Determine the extent to which the product was success-
fully disseminated
(Several criteria can be used, depending partially on the nature of the dissemination effort)

1. Cost-benefit criteria
   a. Determine resources spent in disseminating the product
   b. Determine the number of people or groups who have adopted the product
   c. Compare a and b

2. Extent to which the product is disseminated
   a. Determine the number of possible adopters contacted
   b. Determine the number of people/groups adopting
   c. Compare a and b
      (This can be a problem. The nature of the innovation adoption is such that it is slow at first, then rapidly accelerating, and finally slowing down again. Diffusion of any innovation can take considerable time, making evaluation of the effort difficult)

3. Extent to which needs are met

4. A combination of the above, or some other criteria agreeable both to disseminator and product developer
Chapter V

Summary, Examination of Educational Significance and
Suggestions for Further Research

5.1 Summary

a. Background

Educational change does not seem to occur in any systematic manner. Cawelti (1967), noted that "the haphazard way changes are introduced in schools leads to highly uneven effects across the country [p. 58]." Changes are all too often made in schools because someone with charisma persuades a school board they should be made, because some department head has a good idea and is able to convince the right people of its worth, or because other schools in the area are doing it and it is receiving a lot of publicity.

Wolf (1973), characterized the educational communication network as a rather disorganized hodgepodge of workshops, training sessions, journals, consultants, etc., which is almost totally ineffective in bringing about any systematic change. He attributes this ineffectiveness to: (1) the relative absence of reliable knowledge producers and interpreters; (2) disregard for appropriate marketing strategies; (3) underdeveloped information storage and systems and producer-to-consumer communication channels; (4) an insufficient number of working diffusion agents; and (5) practitioners' habit of adoption of innovations without examination of the evidence of their value and their potential drawbacks.
Also, Guba (1972), discussed the urgent need for some manner of linkage between researchers in the "ivory tower" and educational practitioners. He goes on to say: "In our struggle to upgrade education in the post-Sputnik era, it is clear that the schools have not taken full advantage of the knowledge produced by educational research."

Studies by Crawford, Kratochvil, and Wright (1972), Leary (1970), The National Center for Educational Research and Development (1968), Richland (1965), and Wolf and Fiorino (1969), have helped to illuminate the disorganized condition of the educational communication network. Perhaps the conclusions forwarded by Wolf and Fiorino (1969), that modern educational practitioners seem interested in change for the sake of change and that models of educational change exhibit an almost complete absence of disciplined inquiry, best summarize the conclusions of each of these studies.

There seems to be little doubt, then, that educational knowledge producers have serious problems communicating the fruits of their researches to educational practitioners. Unfortunately, though, few resources have been allocated to the resolution of this problem. Havelock (1969), discussed the lack of serious programmatic commitments to the study of dissemination. He notes that knowledge utilization is really the concern of relatively very few persons and institutions, and refers to it as "at best a crude art."

Hood (1973), has stated that there exists a real need for a guiding methodology that will help researchers communicate their ideas
more effectively with practitioners. Guba (1974), also has spoken of the need for such a tool:

I come, then to the conclusion that the particular path that has been suggested in the literature for the determination of diffusion strategies and tactics is not especially fruitful... Theories thus far propounded do not afford a means by which a specific diffusion strategy appropriate to the given situation can be developed. We are, in this connection, no more advanced than the example set for us by master practitioners such as Henry M. Brickell can take us.

I conclude that there is no practical way to generate diffusion strategies and tactics known to us now.

b. Purposes and Methodology

The purpose of this study was to describe the development and field testing of a methodology for the dissemination of innovations. This particular methodology was generated using a strategy called "metamethodology" developed by Hutchinson (1973). Metamethodology is a generalized scheme for developing any methodology; or, said in another way, it is a methodology for generating methodologies. Metamethodology has been successfully used to develop a number of other methodologies, e.g., Needs Analysis (Coffing, 1974), Evaluation (Hutchinson et al., 1975), and others. The dissemination methodology produced was field tested by attempting to apply it to the problem of disseminating the instructional improvement model developed by the Clinic to Improve University Teaching at the University of Massachusetts, Amherst. The need for some sort of systematic scheme or model for dissemination seems to be evident.

This study was designed to develop and field test a dissemination methodology. In this study, methodology was defined as a systematized,
operationalized, standardized, set of rules and procedures designed to accomplish a defined purpose.

Systematized implies that there is a logical sequence to the steps; each is included in its particular place for a reason. Operationalized implies that the rules and procedures are stated with sufficient specificity that all people would have the same understanding of what they direct the user of the methodology to do; i.e., they are stated in indirectly observable behavioral terms. By standardized is meant that each person using the methodology will use the same set of rules and procedures.

The purpose of the methodology developed is: to meet educational needs through the dissemination of products. This implies, obviously, that: (1) the products should be disseminated to the greatest possible number of those who need it and (2) real needs should be met for as many persons or groups as possible. Only then will the total purpose have been accomplished. The purpose of this methodology was thus distinct from that of many commercial market models, which accept the existence of a need if the target audience will buy the product. This results in the marketing of a wide variety of products which sometimes do much more harm than good. The methodology developed here directs the user to take steps to determine the real need of the target population for the product.

Product was not defined in the traditional sense of the word in this study. A product can be anything that meets an identified need -- be it an idea, a process, a piece of hardware, or anything else.
Dissemination, then, is not to be equated with sales, since the product may, in some instances, cost the adopter no money.

Neither, incidentally, is dissemination the mere provision of the product (e.g., the mailing of materials). As used in this study, dissemination was defined as the provision of a product to the persons or groups for whom it is most useful, and in a form that will maximize the likelihood of its adoption and continued use.

c. Educational Significance of the Methodology

It would appear that a methodology such as this would improve the general field of dissemination in a variety of ways. First, it would provide a means by which someone with a new idea or product could approach target audiences in a way that would maximize the probability that they will adopt the product. Second, and perhaps more important, such a methodology will provide a "job description" for those working in dissemination. Assuming that the lack of such a job description accounts in good part for the absence of significant numbers of people working in the field, the development of a useful methodology would provide an impetus for increasing numbers to work in dissemination of innovations. It seems reasonable to believe that an enlarged group of diffusion agents, working with a systematic methodology, will eventually, and perhaps even quickly, develop well-defined and respected communication channels by the very performance of their jobs.

d. Content of the Dissemination Methodology

Step one directs the disseminator to negotiate a contract with the product developer. This can be a complex process. Identification
of the product to be disseminated is quite easy if it happens to be a textbook or a piece of audio-visual equipment. If it is a broad concept, e.g., "individualized instruction", specification of just what is to be disseminated can be a thorny problem indeed. Too, with a rather general, vaguely defined product to work with, specification of just what will satisfy the product developer in terms of adoption can be quite difficult -- although it must be done as completely as possible.

In this step, it is also necessary to determine the resources available for the dissemination effort. In some cases, the product developer will not want to commit a specific amount of time and money; in such cases, several alternate plans, each using different amounts of time and money, should be presented for the product developer's approval.

Step two directs the disseminator to plan the systematic application of the rest of the methodology. Basically this entails as careful an analysis as possible of the total available resources (e.g., time, money, manpower, etc.), and an appropriate division of this total among the remaining steps. Quite obviously, the division of resources will need considerable revision along the way during the first few (or perhaps more) applications of the methodology. Experience in its use will make possible much greater accuracy at this stage, however.

Step three directs the disseminator to work with the product developer in the design or adaptation of the product. Several characteristics have been cited in the dissemination literature as being
identified with products that disseminate more readily than others, and the product of concern should be designed or adapted with these in mind. Compatibility with the adopter's values, traditions, or culture is an important factor [e.g., see Brandner and Kearl (1964); Mead (1953); Kivlin and Fliegel (1967)]. Obviously, some judgment as to appropriate target groups need to be made before this adaptation can be made. While an innovation is by nature different from existing products or practices, it is usually quite important that it be no more different than it must be to accomplish its purpose.

Several steps should be taken to reduce the risk involved in adopting the product. It is important [e.g., see Mort (1964); Miles (1964); Sasaki (1956)] to reduce the cost of the product -- including dollar costs, time, the psychological toll taken brought about by a behavior change -- as much as possible. Risk can also be reduced by making it possible to observe the product in use elsewhere. This has been shown to be useful [e.g., see Kivlin and Fliegel (1967); Marsh (1964)] on a number of occasions.

A third method of risk reduction is to make it possible for a consumer to adopt the product on a small scale initially. It has been demonstrated [e.g., see Miles (1964); Ryan and Gross (1943)] that giving the product a "trailability" dimension makes its dissemination easier.

It has been noted [e.g., see Erasmus (1952); Rogers and Svenning (1969)[ that the sooner the effects of any newly adopted product is visible (and, or course, regarded as positive), the more likely the user of that product is to continue. It behooves the product developer,
then, to try to design the product so that at least some of its positive effects are apparent at least relatively early in the implementation. This, of course, is not always possible, especially in education. It seems, however, that it would help if the adopter could be provided with early indications of success by the product developer, i.e., evidence of success at the earliest stages. This may be difficult to provide at first, of course, but careful scrutiny of the first few adoptions should give the product developer and the disseminator a good idea of what to look for as indicators of likely success in the early stages.

Step four directs the disseminator to begin making the target group(s) identified in the previous step aware of the existence and basic nature of the product. A separate step for creation of awareness seems necessary because the adoption decision seems to occur in a series of stages (of which awareness is one) as opposed to its being one single decision [e.g., see Rogers (1971); Coleman, Katz, and Menzel (1966); Beal, Rogers, and Bohlen (1957)]. Mass media have been identified [e.g., see Coleman, Katz, and Menzel (1966); Wilkening (1956); Copp, et al. (1958)] as the most important source of information at the awareness stage. Identification and use of appropriate mass media -- be they typical commercial channels, or be they professional journals -- seems the wisest course of action. (Publication in reputable journals has the added advantage of increasing the credibility of the product).
Step five directs the disseminator to conduct a needs analysis in order to determine which groups need the product.

The Coffing-Hutchinson Needs Analysis Methodology is recommended as one strategy because it is operationally stated and because it provides criteria by which it can be evaluated; no pretense is made that it is the only (or even always the best) way to conduct a needs analysis, however.

Step six directs the disseminator to identify, among those groups already selected, the subgroups with whom the dissemination effort is most likely to be successful. The first determination to be made is this: for which subgroups does the product hold the highest relative advantage over that which (if anything) is currently being used? Grilches (1957), Mansfield (1968), and a number of others support this notion. Relative advantages, of course, can take on many dimensions, e.g., cost, convenience, quality, etc. Of these it is probably best to begin with groups for whom the population would meet a high, rather than a low priority need.

The final substep is to identify, as far as possible, those groups on whom the product will have prohibitively detrimental side effects; these groups are then excluded from the dissemination. The ethical reason for the inclusion of this step is obvious. If the disseminator is not given to stringent ethics, the argument that following this procedure will, over the long run, do wonders for the credibility of the disseminator may carry a great deal more weight.
Step seven directs the disseminator to identify the innovators and opinion leaders among these groups and to focus initial communication on them. Innovators can be identified by their record of adoption of similar products, or, if such evidence is not available, by such characteristics as higher social status, [see Carlson, (1965); Rogers (1958); Madigan (1962)] propensity for using mass media [see Coleman, Katz and Menzel (1966); Gross and Taves (1952)] and size of adoption unit [see Carlson (1965); Cawelti (1967)]. Opinion leaders can be identified by a relatively high social status [Carlson (1965); Emery and Oeser (1958)] and by a general inclination towards innovativeness [Madigan (1972); Emery and Oeser (1958); Carlson (1965)]. Contact with opinion leaders and innovators is doubly beneficial if they decide to adopt, as the mere fact that they have chosen to use the product will have a considerable effect on much of the rest of the target population.

Step seven also contains some suggested procedure for prioritization of those to be contacted.

Step eight contains some recommendations for optional procedures to be followed during the actual presentation of the product to members of the target population. It is important, for example, to know just as much as possible about the person or group involved in terms of their attitude toward the innovation, pressures on them, and potential sources of apprehension. It is also important to know very specifically how the product will help them. If possible, the presentation should be made to all groups affected by the product instead of just those invested
with decision-making powers. [Rogers with Svenning (1969); Rogers and Shoemaker (1971)].

Step nine directs the disseminator to enlist the aid of the adopters for a portion of the remainder of the dissemination effort. Since the most important source of information at the decision stage (as opposed to the awareness stage) of adoption are typically friends, neighbors, and professional colleagues, the disseminator will make his task far easier if some who have chosen to adopt the product will help in the dissemination [e.g., see Ryan and Gross (1943); Miles (1964); Coleman, Katz and Menzel (1966)]. An example of this procedure would be to conduct workshops in a target school, using teachers from schools that had adopted the product to help conduct them.

All of this depends, of course, on opinion leader/innovator willingness to help. It may be necessary to provide some other kinds of things, e.g., special support services, in return. In some cases, it may be best for the disseminator to make himself as unobtrusive as possible and simply allow "opinion leadership" to do its work.

Step ten directs the disseminator to evaluate the results of the adoption (or the rejection). The Fortune-Hutchinson evaluation methodology is recommended as one possible strategy because (1) it is operationally stated, and (2) because it provides criteria by which it can be evaluated itself. It is certainly not the only method for conducting an evaluation, however.

Step eleven is included for the sake of completeness, although it is something that would be done as a matter of routine at any rate.
In this step, the disseminator is directed to recycle through steps four through eleven until the product is completely disseminated or until resources run out.

Step twelve directs the disseminator to evaluate the success of the methodology and revise where appropriate. Three criteria are suggested as being relevant: (1) the degree to which the product has been disseminated, (2) the degree to which the product has met a need where it was disseminated; and (3) cost benefit analysis. It should be noted that it will often be very difficult to analyze the success of any dissemination effort due to the fact that dissemination can take several, often many years. Such time may well not be a resource for this step, and compromises involving evaluation of early indicators of success will have to be made.

c. Field Test

The twelve-step dissemination methodology was field tested using, as a product, the teaching improvement model developed by the Clinic to Improve University Teaching at the University of Massachusetts. The purpose of the field test was not to make any final judgment as to the overall effectiveness of the methodology. Rather the purpose was to identify problems and weaknesses in the methodology as it had initially been developed. After a number of field tests -- in a number of situations and with many different products -- perhaps some judgement can be rendered as to its effectiveness. To try to arrive at such a decision after a single field test would be very premature.
Specifically, the field test resulted in one brand new major step (Step IV), and the substantial revision of several others. It seems fair to say that most of the changes resulting from this field test consist of the addition of procedures that deal specifically with low-resource situations. This stems rather naturally from the fact that the Clinic allocated a rather low level of resources to the dissemination effort.

5.2 Suggestions for Further Research

In the long run, the more field tests conducted in the greatest variety of situations, the faster the methodology will attain maximum operationality and usefulness.

The next field test should very probably be designed to deal with a simpler situation. The Clinic process is a rather complex product, and the target group (other instructional development agencies) was extremely large. Resources were inadequate for the proper performance of the job, and it turned out to be impossible to test all of the steps in the methodology. A test involving a simpler product -- and available resources more in line with the size of the target group -- would very likely add substantially to the content of the methodology.

It would be beneficial to attempt to use the methodology to disseminate many very different kinds of products. Are special adjustments necessary, for example, when product adoption necessitates a large cash outlay? Or, are particular steps necessary when the "product" is strictly a theoretical concept? Tests involving different kinds of products will add much to the generalizability of the methodology.
It would also be interesting to test the applicability of the methodology in disciplines other than education. Although the primary concern of this work has been education, it is quite likely that the methodology could be adapted to other fields. Many of the principles on which the methodology is based are in the literature in such disciplines as anthropology and rural, medical, and general sociology. Field tests in these disciplines would also likely add much to the generalizability of the methodology.

At some point, a field test in a high-resource situation should be conducted. Almost any really important dissemination effort requires a great deal of time and money. It is essential to test the applicability of the methodology in such situations, and to add and revise steps where necessary.

Further research should also include development of Cases II, III, and IV of the methodology. This work is concentrated on Case I. The other cases may not vary a great deal in terms of procedures they require -- or they may. This has yet to be determined, and certainly represents one of the most important areas for future research.

5.3 Significance of This Work

Draft II of this methodology provides a series of systematic, standardized steps, made as operational as possible, designed to accomplish the purpose: to meet needs through the dissemination of products. The steps are based on a review of the relevant literature and the field test conducted with the Clinic to Improve University Teaching.
As far as is known here, this is the closest thing to a usable, operational dissemination methodology that is available to those in education wanting this product to have an impact on relevant members of the community. Is the methodology completely usable? The only answer from this field test is that a good portion of it was usable in this case. Subsequent field tests will be necessary if the utility of the methodology is to be judged accurately and fairly.

The same can be said of the degree to which the methodology has been made operational. Individual field tests tend to make methodologies more operational; however, many field tests are necessary before a methodology begins to approach being completely operational. This field test (i.e., with the Clinic) did detect some gross errors and contribute to the further operationalization of the methodology. However, the heart of the methodology is, thus far, the review and synthesesis of the dissemination literature.

There are steps in the methodology, therefore, for which subsequent users will not find prescriptive directions. It is the responsibility of the users to add these directions as far as they are able, given the results of their field test(s).

What this work is, then, is a significant first step towards the establishment of a much-needed methodology. The establishment of such a methodology would (1) permit more systematic dissemination of innovations in education and (2) help promote the growth in numbers of those working as educational change agents.
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Richland, M. Traveling seminar and conference for the implementation of educational innovations. Santa Monica, California: Systems Development Corporation, 1965.


Appendix I

Additional Details of the Field Test
Some of the detail of the field test was omitted from Chapter IV in order to render the chapter more readable. Much of it is included here in the hope that a closer look at this application of the methodology will help render it more useful to potential users. Added detail will be provided for some, though not all, of the steps. Some are described as completely as is reasonable in the body of the chapter. Given the nature of the material included, there will be an occasional lapse from formal, traditional writing style.

1. **Negotiate a contract with a product developer interested in dissemination.**

It is difficult to overemphasize the difficulties encountered due to lack of understanding of and/or commitment to the dissemination methodology on the part of the Clinic senior staff. Several of the staff had already done a good deal of face-to-face promotion of the Clinic, and were convinced their way was best. They seemed skeptical of the usefulness of the methodology at times, and were reluctant to delegate any authority to make final decisions (especially when resource consumption was involved). The steps provided should be followed completely. It is essential to insure the understanding and commitment of the product developer; otherwise, the struggle to insure that the steps are carried out will never really end. This is particularly true when the product developer(s) perceive themselves as well able to promote their product through force of personality.

One way this can be done is to present as specific a plan as possible as to how the methodology can be used to disseminate the product, given
different levels of resources. This was not done with the Clinic, of course, (it is one of the recommended additions), but it certainly could have been. For $1,000 or less, for example, the Clinic would have been restricted to distribution of promotional literature and working professional materials through the mail. For an intermediate resource commitment, the mail promotion could have been combined with a training seminar or two. Given a high resource commitment, these could be combined with such things as visits to particularly interested colleges and universities, coupled with the offer of follow-up support services (consultant time, computer time, etc.) if the Clinic model is adopted.

II. Plan the implementation of the remaining steps in the methodology.

The numbers in the resource allocation chart, it must again be emphasized, are extremely tentative. They will probably not be made more firm until the methodology receives many more field tests. One of the major problems is accurate identification of the total resources available -- i.e., product developer time, disseminator time, money for salaries, travel, computer time -- the categories are virtually endless.

It is possible to argue with some of the numbers. Step IX, for example, "making the product and support services available" is allocated five per cent of the resources; There are cases possible, however in which a great deal of money would be involved, and this would have to change. Step X, "use of innovators/opinion leaders in the rest
of the dissemination" might often require much time, but one can envision instances in which dollar expenditure would be minimal. It is important to remain flexible.

III. Have the product developer design -- or adapt, if the product is already designed -- the product to be as amenable to dissemination as possible, without changing the product's capacity to meet the need.

Efforts to reclude the cost of the Clinic process and its complexity are reasonably well-documented in Chapter IV. Documentation of the divisibility (or trialability) of the process, however, is not, and is included here.

Theoretically, at least, any one of a number of small components of the Clinic process may be tried independent of the others. These components include: the TABS (Teaching Analysis by Students) questionnaire, the teacher self-assessment instrument, microteaching, the concept of graduate students as teaching improvement specialist, detailed explanations of various teaching skills, and teach-improvement strategies. These are, of course, designed to fit together as a whole process. There is no reason that an institution could not begin with one small component of the process, however, on a trial basis.

The observability dimension of the Clinic process deserves further discussion also. Mention was made in Chapter IV that data regarding the value of the process could, on some occasions, serve as a substitute for direct observation of the process. In this connection, the Clinic
conducted, during the spring semester of 1975, a control/experimental group evaluation study. The purpose was to obtain some empirical evidence as to the effectiveness of the process. Data indicate that there is some evidence of the effectiveness of the Clinic process. The final report has not yet been written, due to the fact that the co-directors of the study have left the Clinic. It will be completed soon, however, and will be the best data the Clinic can show other schools regarding the usefulness of its process.

One of the most important problems with regard to educational products is that their benefits are very often long-term, i.e., benefits of the adoption of a product are not immediately visible (whereas the costs most often are). It can be enormously helpful to provide some sort of positive feedback to the adopter relatively soon after the adoption.

This can be quite difficult, although it is certainly often possible. Fortunately for the Clinic, the process does provide for some feedback to the adopter fairly quickly. Initial questionnaire and observation data are made available to faculty clients almost immediately, and the application of teaching improvement strategies very often takes weeks rather than months. Data on faculty satisfaction with the process, then, can often be made available rather quickly to appropriate decision makers at the school. Faculty satisfaction may not necessarily indicate all is well, but it is a good positive indicator, and immeasurably better than no data at all.

IV. (Draft 2) Develop a plan to create as broad an awareness of the product as possible.
This step is described fairly thoroughly in Chapter IV; however, it seems advisable to make mention of a few items.

A lesson was learned about use of too many resources in this step. A brochure should be a relatively simple endeavor; not so in this case. It went through at least six drafts, and was critiqued by altogether too many people. There was far too much concern about graphics and writing style. Granted, it should be attractive and well-written; however, a school was not going to adopt the Clinic model on the basis of the brochure. It was designed simply to make the colleges aware of our existence and purposes, and to offer more information if desired.

An incredible amount of time was wasted. The field test revealed that it is at least as important not to use excess resources on this step as it is to use enough resources to do the job properly. Literature also indicates (as noted in Chapter III) that critical judgments about the product are typically not made at this point. It is not necessary at this point -- though it most certainly will become necessary -- to provide the amount of information a potential adopter will need to make a decision about the product.

V. (Draft 1) Identify general populations that will benefit from the adoption of the product (potential adopters).

Draft one of the methodology provided that this step would be conducted by the disseminator, with the assistance of whomever the disseminator thought appropriate. It turned out that a rather naive assumption had been made, i.e., that the decision maker(s) would readily go along with this.
In fact, the Clinic senior staff had apparently had a target group -- other colleges and universities that had some type of faculty development program -- in mind for some time. It became apparent that, at least some of the time, the product developer will have as good (or better) an idea as anyone of the most appropriate target group(s). Moreover, it is their money that is being spent, and they should at least be invited to provide input into this process.

The Coffing-Hutchinson Needs Analysis methodology is recommended at this point because (1) it provides the decision-maker with the option of deciding who will conduct the initial needs analysis and (2) it provides operational procedures for the actual conduct of the analysis itself.

VI. (Draft 1) Identify, among the designated potential adopters, those subgroups most likely to react favorably to the product and focus communication upon them.

Essentially, the first part of this step involves identification of the most innovative in the population. As discussed in Chapter IV, it really did not make much sense to try to isolate the most innovative faculty development agencies. The growth of such agencies is a recent phenomenon; they have simply not been in existence long enough to enable one to determine which agencies were characteristically most innovative.

Nor was it particularly easy to accurately identify opinion leaders; an effort was made, however, using some admittedly rather crude measures. In a series of meetings with Glenn Erickson, a number of
agencies that seemed to be the most prestigious were identified. Criteria included (1) those agencies that appeared to be most involved in consulting with others; and (2) those agencies whose staff members were most active in publishing. This did give us a rather gross estimate of at least who some of the opinion leaders were.

The second part of this step is where personal contact is to be made, and it is here that the field test encountered its greatest difficulties. Much personal promotion of the Clinic had already been done, albeit to a large extent in a rather unsystematic fashion. This kind of activity has value, of course. However, I felt that it was very important that some resources be spent on some direct contact with the most influential faculty development agencies. There were two reasons, the first selfish: to test this step in the methodology. The second -- and by far the most important -- was that by all the evidence in the literature it represented the most efficient expenditure of funds in terms of disseminating the Clinic model.

The resources for this certainly existed; the Clinic's funding was quite generous. However, it became clear that the staff members who had decision-making responsibility in this area agreed that more of an impact could be made through more superficial contact with larger numbers of agencies. Hence, I had to spend much of my time in mail correspondence with other institutions.

As noted in the chapter, Michael Milnik and Glenn Erickson were interviewed. Their views were solicited with regard to what they con-
sidered to be important elements in personal promotion of the Clinic. Their comments were as follows:

**Michael Melnik's comments:**

Dr. Melnik felt, first of all, that it was important to know as much about the person with whom you would be dealing as possible. One useful technique is to allow the other person to talk just as much as possible before you (the disseminator) say anything; of course, some kind of research should be done prior to the meeting. Reading the publications of the agency would certainly be a minimal requirement. Extensive conversation with agency decision-makers prior to any dissemination effort would be highly recommended as well.

It is important, he feels, to know something about the resources and limitations of the potential adopter's institution, and how the produce (i.e., the Clinic) could fit into the particular environment involved. The agency's and/or the college's publications can provide clues. This prior to personal meetings. Knowledge of the person and his/her institution can give a better idea of where the credibility of the disseminator or the product might come into question (e.g., an administrator's doubts might well be different from a faculty member's, a student's or a researcher's). It also makes it easier to gear the presentation to the level of sophistication of the target (e.g., how much do they know about faculty development?). Knowledge of the person may make it easier to point to similar kinds of persons who have adopted all or part of the program. Above all, it is important to be extremely knowledgeable about the product; in particular, how will fit in with the client's system and how much it will cost.
Glenn Erickson's comments:

Dr. Erickson's point of view was that, first of all it was extremely important to be rather low-key in dealing with members of the academic community; oversell is a serious mistake.

He feels that, in any presentation, it is advisable to actually show the process as completely as possible to the client. This can be done by using the introductory film we at the Clinic have developed, or the slide presentation, or case-study material including videotapes of previous clients (from whom explicit permission has been received, of course.)

He also maintains it is important to admit that we at the Clinic do have some problems. We do not, for example, have data indicating that use of the process results in better student achievement. The "seller" should be prepared, however, to discuss the importance of the data we do have i.e., client satisfaction with this product.

Dr. Erickson adds that it is necessary to be able to put your product (The Clinic) in the context of other programs having similar purposes, while describing ways in which you feel your product is unique. One should also be able to describe the incremental steps the client could take if he decides to adopt the product. He agrees with Dr. Milnik that the Clinic spokesman should describe how the process could fit within the particular client's environment and be able to provide cost figures if necessary. As a final point, he adds that as varied a group as possible from the client institution -- e.g., faculty from various departments, administrators, perhaps even students -- should be given a chance to listen to the presentation.
The above comments were most helpful, as they come from individuals who have enjoyed considerable success. It must be noted, however, that it is in the area of personal promotion that personal style is of the most importance. This is something that can be developed somewhat through experience, but it is difficult to teach, and almost impossible to develop steps for. It is in this area that those who are already successful in promotion would probably do well not to try to closely follow the steps provided.

VII. (Draft 1) If the client(s) decide(s) to adopt, make the product, including all support services, available to him/her.

Beyond the provision of a set or two of working papers, a few copies of the TABS instrument, and free consulting time if the adopter was willing to come to Amherst, there was little that the Clinic could provide without charge to adopters.

If the budget made greater provision for support services -- as certainly would have been helpful for dissemination -- support services could have included computer time for TABS analysis, provision of materials, and provision of free consulting time.

VIII. (Draft 1) Evaluate the results of the adoption/rejection

As noted in Chapter IV, the Fortune-Hutchinson evaluation methodology seems particularly suited for use here. Although there are other evaluation procedures available, they are not written in systematic, standard, operational steps. The Fortune-Hutchinson methodology is, and the dissemination methodology is (though it is not yet operational as it will be).
In this particular case, the use of this methodology was not possible. During each of the last two years, attempts were made to apply Fortune-Hutchinson with the Clinic senior staff. Each time, due to lack of senior staff time and/or improper application of the methodology by the evaluator, attempts to use this methodology were singularly unsuccessful. The adoption of the methodology described in Chapter IV was implemented.

The failure of the methodology was to such a degree due to a situation-special conditions, no reason was seen to change the recommendation for its use.

The remainder of the field test was described reasonably completely in Chapter IV. It is hoped that the chapter and this appendix combined will provide enough detail on the field test to help make it usable to those wishing to apply it in the future.
Appendix II

Metamethodology
Metamethodology
Draft VIII

Tim Hutchinson and Jim Thomann
October, 1974

I. Prepare to use Metamethodology

A. Learn how to apply Metamethodology

1. Take a course on Metamethodology, if a course is available.

2. Read all the documentation on Metamethodology.

B. Decide how to use the available resources

1. Determine how much of what resources are available to be used in the development of a methodology.

2. Allocate the actual amount of your time available or 100 hours of your time, whichever is smaller, as suggested in Figure A.

3. When these allocations are used up, allocate half of the remaining resources as you choose in Figure A.

4. When these allocations are used up, allocate the remaining resources as you choose in Figure A.

5. If any resources remain, go to step II.

6. Get more resources and go to step I.B.

II. Choose a problem

A. Examine your interests and, if possible, simply choose a problem for which you would like to provide a methodological solution and go to step III.

B. Identify sources of problem statements and, if possible, choose one of these problems if you would like to provide a methodological solution and go to step III.

C. Allocate additional resources to Major Process II and use the Coffing Client-Demand Methodology to choose a problem.
Figure 8
Resource Allocation Chart

<table>
<thead>
<tr>
<th>Major Process</th>
<th>First 100 hrs. or less %</th>
<th>First 100 hrs. or less amount</th>
<th>Second Allocation</th>
<th>Third Allocation</th>
</tr>
</thead>
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<td>II</td>
<td>5</td>
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<tr>
<td>VIII</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
[N.B. If at any time you find yourself reading any of the steps below and nothing is happening, try the following four steps:

1) Identify all the roles necessary in this use of Metamethodology.
2) Define these roles.
3) Determine the sequence in which the roles should be taken on by the user.
4) Do each of these roles in the sequence determined above.]

III. State a purpose for your methodology by analyzing the problem area and determining a purpose that will solve the problem.

A. Investigate the problem area by allocating your resources to one or more of the following activities.
   1. Read the literature in the area.
   2. Talk to people who work in the area.
   3. Examine work being done in the area.
   4. Brainstorm about the problem area.
   5. Try out tools that already exist in problem areas.

B. Narrow down area into manageable piece (focus).
   1. If the problem area is already small enough to be manageable, go to step III, C.
   2. Choose a piece of the problem area and go to step III, A.

C. Investigate purposes within the chosen piece of the problem area.
   1. Brainstorm purposes that will solve the chosen problem.
   2. Read the literature applicable to the chosen problem to identify stated or implied purposes.
3. Ask others for purposes they think will solve the chosen problem.

D. If more than one purpose has resulted from the previous step, then choose the most appropriate one.

E. Check chosen purpose against following two criteria:

1. Check purpose to see that it is not trivial.
   a) See if some unimportant event could occur which would satisfy the stated purpose. For example, if the purpose was as follows: to build educational products; then the event of making a ruler would satisfy the purpose. Therefore, the purpose is trivial. Consider the purpose: to build curricula. A bad curricula is still a curricula and would satisfy the purpose, therefore, the purpose is trivial.
   b) If the purpose is judged to be trivial, revise the purpose and repeat step II, E, I, a).

2. Check the purpose to see if it really solves the problem you have in mind.
   a) Imagine that the purpose is accomplished. Could the problem still exist?
   b) If yes, revise the purpose and go to step II, E, I, a.

F. If resources warrant, show purpose to others for their critique based on the above two criteria.

G. Write out purpose and commit yourself to it. (If you can say why you don't like it, then revise and recycle to E. If you can't say why you don't like it, then go on to Step III.)

IV. Test the purpose by the following criteria:

A. Is the purpose desirable?

1. Use one of the following methods -- where not obvious, use Complex Method.
   a) Simple Method, do one or more of the following:
i) Answer question yourself with rationale

ii) Get diverse groups to answer question

iii) Check notes from previous literature review and check any other literature on the area to see if purpose is desirable.

b) Complex Method -- use Coffing Client-Demand Methodology

2. Revise the purpose if necessary and go to step II, E, l, a).

B. Is the purpose operationalizable?

1. Use "Operationalization of Fuzzy Concepts"

[N.B. It is not necessary to do a complete operationalization at this point. It is only necessary to find if the purpose can be operationalized.]

2. Repeat step III, A, in light of operationalization and revise if necessary.

C. Is the purpose practicable? Do one or more of the following:

1. Answer question yourself in terms of

   a) Is the development of a methodology practical given this purpose?

   b) Once developed would the methodology be a practical way to accomplish the purpose?

2. Get diverse groups to answer questions l.a) and l.b) above.

   a) Methodologists answer question of C.l.a)

   b) Methodologists and potential users answer question of C.l.b)

3. Revise the purpose if necessary and recycle through A and B; otherwise go to D.
D. Are existing methodologies insufficient?

1. Test in the following ways.
   a) Search area for existing methodologies.
   b) Take found methodologies and test them against definition of methodology. If they all fail go to Step IV.
   c) Are they designed to accomplish your purpose? If not, go to Step IV
   d) Does any one of them accomplish your purpose? If not go to Step IV.
   e) Are these practical? (See if they are used.) If not go to Step IV
   f) Are they desirable? If all are not, go to Step IV.
   g) Is any one complete? (You may work on it if it is not.)

2. Revise the purpose and recycle through tests, if necessary.

V. Once all answers to III are yes, then analyze the implications of the purpose for the development of methodology. (This is a way of identifying the attributes that the methodology must have.)

A. Use the following method to analyze the implications of the purpose. (Hutchinson says "Problem implies its own solutions." In this case, the implications of the purpose supply the first approximation of the major elements of the methodology.)

1. a) Imagine and write down in what ways you could fail to accomplish the purpose.
   b) Imagine and write down in what ways you can accomplish the purpose, avoiding all the problems.
   c) Imagine the purpose being accomplished; write down what is happening.
d) If resources permit and you wish to, generate alternatives to the items identified in a), b), and c) above.

i) For each element determined through b + c, determine all possible alternatives to accomplish the purpose.

ii) Create one list from all the lists generated in the previous step. For those dimensions generated in a., change their statements so that they state a procedure or procedures to solve the problem they originally identified.

iii) Test the completeness of the above list by using one or more of the following methods to generate alternative lists of dimensions. Then examine these new lists. For each dimension not on the list produced in d.ii) above that you want on that list, add it to the list. Add any other dimensions to the list that you think of while doing this process which are not already on the list and which you want on the list.

1) Ask others to do steps a-c.

2) Think up alternatives which have nothing to do with this purpose and consider whether they do or not.

3) Go back to list generated in b and c, and consider again whether any of those should be on list and add any new ones.

4) Ask yourself if your alternatives have any alternatives to them.

5) Ask what bad alternatives exist that are not on this list and how they could be changed to good alternatives.

6) Use the possible methodologies generated in Step III, D.
7) Use any other tests of your own choosing

2. Choose the initial set of major processes for the methodology.
   a) Look over the list of dimensions and choose those which you feel will accomplish the purpose.
   b) Combine together any dimensions that appear to go together.
   c) Write out a new list with any combined dimensions listed together.

B. Organize the attribute into a rational order of steps.

1. Determine which implications are not necessary for the methodology to accomplish the purpose and strike them from list.

2. Determine which implications are contained in others and note that. Determine which implications can be combined to make one step, and give those a name.
   a) Combine any dimensions on the list which are related and define a single process when combined but are not logical substeps of each other.
   b) Create a major step naming this process and list the combined dimensions as substeps of this.

3. Ask which implications you would have to accomplish first in order to accomplish the rest.

4. Write it out as the first step.

5. Ask which implication would now be first, given that the first one is accomplished.

6. Write it down as the second step.

7. Continue this process until all major implications are accounted for.
8. Order any substeps by cycling through 3-7.

9. Check to see if the order has a logical flow to it.

10. Check to make sure that all implications are stated procedurally.

   a) For example, if a step reads "objectives", it is not stated procedurally.

   b) If the step is not stated procedurally rewrite it. For example, "choose objectives."

11. Write out a revised list.

12. Check completion of ordering by asking others (at least one) to give an ordering of implications with explanation of why, if possible, without showing them your ordering. This can be verbal or written, depending on the resources available.

13. Do a revised ordering based on responses from 12.

14. Give revised ordered list to others experienced in the problem area for critique.

   a) Write out purpose of methodology.

   b) Write out following statement:

   Please critique the list of steps designed to accomplish the above purpose and point out those steps that you do not understand, steps you feel should be left out, and any steps, concepts and/or ideas that you feel should be added.

   (1. Look at the first major process and ask yourself if anything has to be done before that process in order to accomplish the purpose.

   (2. If there is, add a new major process at the beginning of the methodology and go to step (1. above.

   (3. Look at the last major process and ask yourself if anything else has to be done,
e.g., testing to see if the application has been successful.

(4. If there is, add a new major process to the end and go to step (3. above.

C. Write out final list to be used throughout rest of methodology. Mark it Draft I, your name, and data.

VI. Operationalize the purpose.

A. The straight analysis technique

1. Identify the fuzzy concepts in the purpose.

2. Directly operationalize each fuzzy concept.

3. Directly operationalize the interaction among fuzzy concepts.

4. Test the criteria for completeness in a manner of your choosing and revise them if necessary.

B. Review the final set of components. If you are unsatisfied go to C; otherwise commit yourself to the set of components and go to Step VII.

C. Revise the components. If you are still unsatisfied go to D; otherwise commit yourself to the revised set of components and go to Step VII.

D. Use Hutchinson's "Operationalization of Fuzzy Concepts."

VII. Design Procedures

[N.B. Design or redesign can be done at any level of breakdown including the highest.]

A. Identify the first (next) step to be designed (i.e., the first crucial step where it is not clear that the step would be easy to develop).

1. Examine each step of the draft of the methodology for gaps. Unoperational steps or breaks in continuity.

2. When a gap is found, determine if it is crucial. Use the operationalization of the purpose as criteria to determine if the gap is crucial.
3. If the gap is not crucial, go back to 1. and continue to examine; otherwise go to 4.

4. Determine if gap is hard to develop.
   a) Answer this question: When I read this step does it convey to me what must be done to accomplish it?
   b) If the answer is no, go to B; otherwise go to 5.

5. Cycle back to 1. If no gaps were found that fit both criteria then identify "crucial" gaps and develop those. If no "crucial" gaps were found then develop any gaps.

B. Identify the step's subpurpose. This is usually accomplished by adding the word "to" in front of the step.

C. Analyze implications of subpurpose in terms of main purpose.

a. Use the following method to analyze implications of the subpurpose:
   1. a) Imagine and write down in what ways you could fail to accomplish the purpose.
   b) Imagine and write down in what ways you can accomplish the purpose, avoiding all the problems.
   c) Imagine the purpose being accomplished; write down what is happening.
   d) i) For each element determined through b + c, determine all possible alternatives to accomplish the purpose.
      ii) Create one list from all the lists generated in the previous step. For those dimensions generated in a., change their statements so that they state a procedure or procedures to solve the problems they originally identified.
iii) Test the completeness of the above list by using one or more of the following methods to generate alternative lists of dimensions. Then examine these new lists. For each dimension not on the list produced in d.ii) above that you want on that list, add it to the list. Add any other dimensions to the list that you think of while doing this process which are not already on the list and which you want on the list.

1) Ask others to do steps a-c.

2) Think up alternatives which have nothing to do with this purpose and consider whether they do or not.

3) Go back to list generated in b and c, and consider again whether any of those should be on list and add any new ones.

4) Ask yourself if your alternatives have any alternatives to them.

5) Ask what bad alternatives exist that are not on this list and how they could be changed to good alternatives.

6) Use any other tests of your own choosing.

2. Choose the initial set of major steps for the major process.

   a) Look over the list of dimensions and choose those you feel will accomplish the purpose.

   b) Combine together any dimensions that appear to go together.

   c) Write out a new list with any combined dimensions listed together.
D. Organize the attributes into a rational order of steps.

1. Determine which implications are not necessary for the methodology (accomplishing purpose) and strike them from list.

2. Determine which implications are contained in others and note that. Determine which implications can be combined to make one step, and give those a name.
   a) Combine any dimensions on the list which are related and define a single process when combined but are not logical substeps of each other.
   b) Create a major step naming this process and list the combined dimensions as substeps of this.

3. Ask which implication you would have to accomplish first in order to accomplish the rest.

4. Write it out as first step.

5. Ask which implication would now be first, given the first one is accomplished.

6. Write it down as second step.

7. Do this process until all major implications are accounted for.

8. Order any substeps by cycling through 3-7.

9. Check to see if order has logical flow to it.

10. Check to make sure all implications are stated procedurally.

11. Check completion of ordering by asking others (at least one) to give an ordering of implication with explanation of why, if possible, without showing them your ordering. This can be verbal or written, depending on the resources available.

12. Do a revised ordering based on responses from 11.
13. Give revised ordered list to others experienced in problem area for critique.
   a) Write out purpose of step under development and methodology.
   b) Write out following statement:
      Please critique the list of steps designed to accomplish the above purpose and point out those steps that you do not understand, steps you feel should be left out, and any steps, concepts and/or ideas that you feel should be added.
   c) Present a copy of the above two statements along with a copy of the processes of the step under development to each of the individuals who will critique these processes.

14. Do a final ordering and write it out.
   a) Add in any steps or functions that are implied by the existing steps at the same level of abstraction.
   b) Identify the anchoring steps for the step under development at this time.
   c) Write out final list to be used throughout rest of methodology.

E. Determine the amount of completeness and test for it.

F. Examine the logic of the step under design in terms of subpurpose and main purpose.

G. Fill in the gaps that are found and then recycle to VII.E. If no gaps, go on to VII.G.

H. Examine the logic of entire methodology and its parts in terms of main purpose in light of the step under development.

I. Redesign step and/or methodology and recycle to VII.G. If no gaps, then go to VII.I.

J. Recycle to VII.A. until you feel that further applications of VII will not produce sufficient improvement to warrant spending of resources.
K. Before going to VIII. write out a new draft of the methodology including all changes made to date as a result of VII. Mark this Draft II, your name, and date.

[N.B. One may conduct a field test as well as running through VII by using the data obtained in the field test to help out in the development procedures.]

VIII. Test and then revise the purpose and/or procedures if necessary.

A. Field test the methodology. See David Rosen's dissertation (UMass-Amherst) for more detail.

1. Determine what is to be field tested -- a part of the methodology or the entire methodology.

2. Determine the simplest field test not already done on the subject of the field test.

3. Write out the purpose (of the methodology or the part to be tested) and its operationalization.

4. Determine your goals for the field test. If this is not easy to do, use the Goals Process from the Fortune/Hutchinson Evaluation Methodology.

5. Develop the measures for the field test from the operationalization of the purpose and your goals. If this is not easy to do, use the Measuring Process from the Fortune/Hutchinson Evaluation Methodology.

6. Do the field test and carry through the observations.

7. Use the data to revise the methodology or the part by recycling to Step VII.

B. Conclusion-oriented research of methodology; if necessary, redesign (use Step VII). Use the Knowledge Generation Methodology.
Appendix III

Evaluation Survey Form
The following brief survey was sent with the Clinic materials. Return postage was provided.

Dear Colleague:

Would you please indicate how you regard the usefulness or potential usefulness of the following materials with respect to your organization:

1. The overall Clinic Process
   Very useful 1 2 3 4 5 Not useful

2. The diagnostic instruments (the TABS, other questionnaires, etc.)
   Very useful 1 2 3 4 5 Not useful

3. Data Analysis techniques
   Very useful 1 2 3 4 5 Not useful

4. Teaching improvement strategies
   Very useful 1 2 3 4 5 Not useful

5. Explanations of specific teaching skills
   Very useful 1 2 3 4 5 Not useful

Thank you very much for your cooperation.