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METHODOLOGY FOR EDUCATIONAL FIELD STUDIES.

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1968
METHODOLOGY FOR EDUCATIONAL FIELD STUDIES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Kathleen Gnifkowski O'Keefe, B.A., M.A.

The Ohio State University
1968

Approved

[Signature]
Adviser
College of Education
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VITA

June 20, 1940  Born - St. Cloud, Minnesota
1963 .......... M.A., The Ohio State University, Columbus Ohio
1963-1965 . . Research Assistant, The Ohio State University, Columbus, Ohio
1965-1966 . . Research Associate, The Ohio State University, Columbus, Ohio
1966-1967 . . Instructor, University of Pittsburgh, Pittsburgh, Pennsylvania
1967-1968 . . Research Associate, University of Pittsburgh, Pittsburgh, Pennsylvania

FIELDS OF STUDY

Major Field: Education

Studies in Audiovisual Education. Professor Edgar Dale

Studies in Radio-Television Education. Professor I. Keith Tyler

Studies in Educational Research. Professor Egon G. Cuba
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CHAPTER I

FIELD STUDIES IN EDUCATION

The Need For Educational Field Studies

Educational change and innovations are dominant concerns of today's educator. Improving education by incorporating educational theory into the practices of the classroom is not a new concern. But the issue is now receiving greater study because the U.S. Office of Education is providing substantial funds to promote classroom change. In 1966, alone, Title I, of the Elementary and Secondary Education Act of 1965 provided one billion dollars for projects specifically designed to produce educational change. In 1967 over one billion dollars was again allotted for Title I projects of ESEA.\(^1\) Called the "biggest bonanza" ever to public education, this Act has provided the funds necessary to adapt new ideas to the school setting. At the same time it has raised a number of concerns with regard to how change is produced and how the direction and intensity of the change produced is assessed.

When new approaches or new methods of teaching are advocated, "how well does it work?" and "does it make a difference?" are always fundamental questions. With ESEA there is also a pragmatic reason for

\(^1\) During the rest of the paper ESEA will be used as an abbreviation for the Elementary and Secondary Education Act of 1965.
asking these questions. The government requires that a certain percentage of the funds be reserved for an evaluation of the innovative projects as they are experienced in the schools. Yet at the same time, it is claimed that educators lack the methodology and tools to evaluate the studies. As the director for Title III projects of ESEA reports:

Two areas of weakness in proposals have been provisions for evaluation and dissemination. To measure the impact of a new approach, quantitative evaluation - how many? how often? must be accompanied by qualitative evaluation to determine what differences in learning, in attitudes, in growth a PACE² (Projects to Advance Creativity in Education) project has meant to a child.³

In an article discussing Title I of ESEA, Daniel Stufflebeam states the concern for evaluation as follows:

... While this Act brought an unprecedented opportunity to improve education, it also required the participating schools to evaluate their new programs - and education was ill prepared to do this.

Experience, trained personnel, designs, and instruments - all were lacking. The efforts of educational research methodologists to respond to these needs erupted in controversy when factions recommended opposing approaches for accomplishing the needed evaluation ... . These circumstances, plus the urgency for completing evaluation of Title I and many other kinds of projects created a crisis in education. It became obvious that evaluation as currently practiced in education was itself in need of evaluation.⁴

²PACE is the acronym given to Title III projects of ESEA.

³Nolan Estes, "ESEA: Dimensions '67 of Title III," Audiovisual Instruction, XI (December, 1966), 796.

The reason for the present lack of methodology to handle such situations is found in the history of the development of educational research. Within the framework of empiricism, it, like the other social sciences, has generally attempted to emulate the research approach of the physical sciences. Thus, educational research traditionally has been concerned with experimentation and the statistical assessment of learning, of methods of teaching, of teacher characteristics and the like. As it has come to be known, educational research ideally involves a tightly controlled situation in which the investigator can isolate and manipulate certain limited variables in order to study the effect of changes.

The conditions for this assessment exist most favorably in the laboratory, but the approach has also been used for studies within the operating school. In such cases the studies have often been called action research. A large number of reading studies and television studies, for example, are evidence of this strategy. The emphasis upon employing the techniques of the physical sciences for classroom studies has led to experimental designs such as the Latin-Graeco Square or the Solomon-Four-Plot Design. An extensive review and analysis of such experimental designs for educational studies has been made by Campbell and Stanley.


A major reason for the isolation of variables and control of the situation by researchers is to establish a definite relationship between independent and dependent variables. This is done in order that the researcher may draw conclusions about the variables which are independent of the immediate situation in which the experiment was performed. This is an important concern for researchers in their work, not only to establish relationships, but to provide a basis for generalization. Such controlled studies will continue to be of major importance in determining how students learn. However, the present emphasis upon educational change has made evident the importance of knowing not only how new ideas work in the controlled laboratory, but also how they work within various contexts, within different school situations.

Programs concerned with the adaptation of innovations to the school situation are not structured to provide for the isolation and manipulation of selected variables in pre-determined ways. The aim is not to set up a control and experimental group, establish rigid conditions for the use of the innovation, and then on the basis of these pre-determined conditions; ask whether the use of the innovation produced change. The concern, rather is to determine how the programs operate without the direct manipulation of the investigator. These studies are concerned with queries such as the acceptance of the innovation by the school, particular school uses and adaptations of the innovation, school perceptions of the new approach, kinds of student activity that result, limiting factors and the manner in which the new approach might be adapted to other situations. The
context within which the innovation is studied is considered necessary and important. But it is something that is not to be controlled in the way that the laboratory investigator controls the environment of the laboratory. Concern is with the actual situation; how in fact the innovation worked in the schools. It is not with the possibilities of how it could work. Concern with possibilities can be aptly examined with experimental studies, whereas inquiries into actualities lend themselves to experimental approaches of field studies.

From this it is seen that evaluation of innovations within schools, such as projects funded under ESEA, are different in kind from the traditional educational research problems. The lack of rigid control by the evaluator is not considered detrimental but desirable in order to describe the existing situation—the way in which programmed instruction, "new math" or a maximum availability of films, fits into the school situation. This point has been strongly stated by Guba with an analogy to the automobile industry.

... Let us imagine that in any given year the manufacturer may decide to redesign the carburetion system, the braking mechanism and the power steering mechanism. Each of these components will be separately designed and engineered, and as prototypes are built they will be subjected to a variety of laboratory tests to insure that they meet minimal design specifications. These tests will be conducted under very rigorous control conditions and may even be carried out entirely at the direction...
of a computer. It may be safely assumed that these tests will result in a great deal of useful information which will lead to a highly refined product.

It would be foolhardy to suppose, however, that the laboratory condition simulates the real life condition so well that the manufacturer can simply install the laboratory tested components in his automobile with complete confidence that they will function properly. He is much more likely to build a prototype automobile which combines all of the separately tested components and then to subject that entire package to a series of tests which reproduce exactly the demands and conditions of normal driving. Thus, every manufacturer has his test track.

The educator is wise to take a leaf from this same book. Many educational innovations are complex, i.e., they consist of a large number of components. It is evident that these components can be separately tested . . . Yet no one would argue that the combination of such separately tested and refined components would be sure to work, as a whole, even though our confidence in a positive outcome is obviously much higher under such circumstances than it would be if the components had not been separately tested. The crucial point to note, however, is that the field test itself is concerned with the entire phenomenon and not with the components, and must therefore be carried out under conditions that not only approximate reality or simulate reality but that are reality.9

A Need for Field Study Methodology The need for the evaluation of innovations within the context of schools exists. There is a sound rationale for the experimental approach of the field study. But education lacks the methodology to deal with such contextual studies. Educators have developed several specific techniques that would contribute to evaluation methods for field studies. They have devised a number of observational techniques for studying the classroom situation. Interviewing, an appropriate way to answer questions

concerning teacher and administrator perceptions and attitudes towards an innovation, is the topic of a number of texts. Surveys, another way to collect data on perceptions and beliefs, have long been used. Yet, by themselves no one of these techniques will supply sufficient data to examine the total school reaction to an innovation. At the same time, there is a dearth of studies combining such evaluative tools in order to consider the operation of a complex variable (the innovation) within the contextual situation. Thus, it is necessary to evolve appropriate strategies from the techniques of observing, interviewing, surveying and general data gathering. It is not possible to rely upon existing instruments for educational field studies.

Related Social Sciences Examined for Field Study Methodology

The methodology of several of the social sciences includes tactics which seem appropriate for educational field studies. Within anthropology, social psychology and sociology there is a history of the use of the participant observer to study a community or group situation. The use of the participant observer by these sciences can also be examined for its relevance to educational field studies.

The anthropologist, however, has largely employed unstructured techniques in an unstructured situation, i.e., the structure is not known to the anthropologist at the time of the study. For example, the anthropologist who wants to study the role of female puberty rites of the Bemba in Africa first needs to know a great deal about family and tribal relationships, plus the nature and extent of Bemba ceremonies. To discover these social structures, the anthropologist
must go to Africa to live among the people and become immersed in
their way of life. Only then can the specific topic of female
puberty rites be studied with an understanding of the people and
their environment. In contrast, the investigator in an educational
field study in the United States already knows the general structure
of the school. As an educator he knows the roles assigned to teachers
and students, the range of acceptable school goals and the daily tasks
of administrators, teachers and students. While he must be concerned
about the specific perspective of a school, he does not have to dis­
cover the dimensions a school considers important. Because of the
sizable difference between the amount of information about a school
that is available to the educational investigator and the information
about a society that is readily available to the anthropologist, the
techniques of the anthropologist are not directly applicable to educa­
tional field studies. These techniques, however, can be modified for
use in educational field studies.

The social psychologist and sociologist have also worked as
participant observers within structured situations. From their
writings a number of appropriate tactics can be borrowed or modified
for educational field studies. Much of the methodological writing,
however, has been done by recollection, 5 to 10 years after the study
was completed. It is subject to forgetting and distortion. Because
the reports are general recollections, there is little specific evidence
to substantiate the validity and reliability of their work. The reports
tend to be more of an apology for their methods than an assessment of
the positive contribution of their strategies for obtaining accurate
data. The issue of the calibration of human beings for use as instruments of evaluation still requires examination for the positive contributions of sophisticated participant observers in obtaining valid data.

**Purpose of This Study** This study aims to contribute to the development of a methodology for educational field study evaluation in several ways: (1) to examine various methods used within the social sciences to determine how these methods could be modified to form a cohesive schema for educational field studies, (2) to examine field study strategies in terms of the classic measurement criteria of validity and reliability, (3) to analyze field study methods in order to determine whether theoretically they can meet the traditional investigatory criteria of validity and reliability and (4) to analyze the feasibility of meeting these criteria in practice through an examination of an exemplary field study concerning educational change.

The quality of data gathered depends upon the methods used to gather these data. Hence, an analysis of field study strategies requires that the specific methods or instruments used be examined to see if they yield useful data.

Two basic issues are consistently raised in looking at any measurement instrument. These issues concern the validity and reliability which the instruments yield. A number of educators have indicated that additional criteria will be needed for the evaluation of on-going school projects. Several criteria frequently mentioned are the timeliness, pervasiveness and credibility of the data as presented to educational decision makers. These are important concerns.
However, a consideration of such criteria depends, first of all, upon a reasonable certitude that a study has depicted what it purported to assess (validity) and that independent observations of the situation would produce similar data (reliability). If these requirements are satisfied, it is appropriate to question the timeliness, credibility and pervasiveness of data for educational decision makers.

Because of the magnitude of a discussion of all criteria that might be used to assess field studies, it was necessary to be selective. In this study the requisite criteria of validity and reliability will be the focus of concern. If it can be shown that field studies can meet these criteria, it is hoped that other studies will then focus upon the other relevant criteria.

In view of the criteria of validity and reliability, the methodological writings of anthropology, sociology and psychology regarding the use of participant observers, specific observation instruments, interviews, surveys and record collections will be reviewed as they contribute to appropriate strategies for field study investigations. Upon this basis field studies will be examined to see whether they can meet the criteria of validity and reliability on a theoretical basis.

As a practical test of the theoretical examination of validity and reliability of educational field study, the methodology of an exemplary educational field study will be analyzed. In this way the feasibility of collecting fruitful data will be assessed. There have been a number of educational field studies in the past. However,
this was one of the first field studies conducted in terms of the recent focus upon educational innovations. A critical appraisal of the validity and reliability of the strategies used will provide the basis for answering the question of the strengths and weaknesses of tactics that are being developed for field studies. It will further provide a basis for the extension, refinement or rejection of such methods.

The project that will be evaluated for field study strategies was designed to specify the effects upon a school of a maximum availability of films and filmstrips. Four schools throughout the country, representing a stratified socio-economic sampling provided the sites for the study. The materials and equipment for a school saturation of films and filmstrips were substantially provided by Encyclopaedia Brittanica Films Incorporated and Bell and Howell Company. The investigation of the innovation in relation to the school situations was done by a team of researchers from the Ohio State University. All of these groups cooperated, yet each was independent. No single group commanded or controlled the situation.

The companies which provided the materials and equipment for the field study called it "Project Discovery." The project report of the investigators is entitled, Implementation of Research Strategies and Tactics for Demonstrations of Newer Media. That report contains the findings regarding the maximum availability of films and filmstrips.

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10 For the results of the study see: Sidney C. Eboch, Implementation of Research Strategies and Tactics for Demonstrations of Newer Media, Columbus, Ohio: The Ohio State University Research Foundation, September, 1966.
at four selected schools. In contrast, this study is concerned with
the appropriateness of field study methods as tested in "Project
Discovery."

As a project resident on the evaluation team, the writer was
involved with the design and operation of the prototype field study.
The directors of the study and the other project residents shared the
data from all four schools with the writer in order that these data
might be analyzed in terms of field study strategies. Beyond this,
the project residents made available personal diaries and corres-
pondence relating to the study so that the role of a resident observer
could be more completely investigated.

This then is the basis of the study in the following chapters.
CHAPTER II

GENERAL FIELD STUDY STRATEGIES

Characteristics of Field Studies. The evaluation of innovations in actual school situations has a number of specific characteristics that must be considered in determining appropriate methods for field studies. This chapter will discuss these characteristics and the general strategies appropriate for field studies. Chapter III will continue the discussion by a consideration of specific field study instruments.

The term "field studies" in educational evaluation refers to those studies which take place under natural conditions and which are "directed toward answering questions in regard to development, diffusion or adoption activities" involving educational change. Since by definition field studies must take place "on site" or in the school, they are contextual. If the processes as well as the "gross residual consequences of the environments for people" are to be discovered, "the

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1 The characteristics of field studies for education have been basically derived from the writings of Egon G. Guba and the report of the Conference on Novel Strategies and Tactics for Field Studies of New Educational Media Demonstrations, as noted in the bibliography.

processes have to be studied intact — in process — in fact." Stating this belief in terms of an educational example, achievement tests might provide a general measure of learning from films, but they do not indicate the types of learning situations in which films are useful. To answer that question, information is needed regarding the different learning situations — the context. In assessing the operation of an innovation the environment is an important dimension; for only by considering the environment can the school use of the innovation be described as it does exist, instead of as it might exist.

A number of examples relating to this point can be found in related fields of study. In describing a study by RAND Corporation of "the discrepancies between the performance of man-machine organizations, as predicted on the basis of knowledge of existing organizations and engineering calculations of how they should perform, and the actual performance attained in the field operations," John Kennedy states:

We learned the hard way something that is probably common knowledge to anthropologists — that people start behaving like people only when the environment they are behaving in has 'reality' for them; in particular that they start to exhibit the full range of adaptation and learning that is the 'essence of humanness' only when the environment is complex, rich and challenging.

Turning to another area of study, frustration in children, the importance of the context of a study is brought out even more forcefully in an example described by Roger Barker:

Some years ago, when I was a student of Kurt Lewin, he and Tamara Dembo and I carried out some

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experiments on frustration. The findings of these experiments have been verified by others and they have become a part of the literature of scientific psychology. The experiments provided basic information about the consequences for children of frustrations, as defined in the experiments, and about the processes that produce these consequences. Time passed. In due course I had a student, and he undertook to study frustration. So far, so good. All in the grand tradition! My student, Clifford L. Fawl, did not replicate the earlier study; he did not contrive frustration for his subjects; he pioneered, and extended the investigation from children in vitro, so to speak, to children in situ. He searched out specimen records of children's everyday behavior for instances of this allegedly important phenomenon without psychologists as operators. Here are the words of his report:

The results... were surprising in two respects. First, even with a liberal interpretation of frustration fewer incidents were detected than we expected. Second, meaningful relationships could not be found between frustration and consequent behavior such as regression and other theoretically meaningful behavioral manifestations.

In other words, frustration was rare in the children's days, and when it did occur it did not have the behavioral consequences observed in the laboratory. It appears that the earlier experiments simulated frustration very well as we defined it and prescribed it for our subjects (in accordance with our theories) but the experiments did not simulate frustrations as life prescribes it for our children.5

These examples show that the laboratory itself provides a certain bias to the data, and provides measures inappropriate to an evaluation of situations in which the environment is not controlled. This does not mean that there are no biases to be concerned about in evaluating ongoing situations. The very act of isolating an experiment in the laboratory setting is intended to avoid situational bias. If an investigator

5 Barker, p. 5.
wants to test the effects of a new drug upon leukemia victims, he does not want interaction from other treatments. Here, it is important to control the environment. However, if one is interested in the psychosomatic effect of the drug, the environment is an important variable.

It is possible to be aware of the nature and extent of both the bias in data derived from the laboratory and that from natural situations. The selection of a specific approach then is based on the type of data of most concern to the investigator.

The fact that the environment is an essential concern to the investigator during field studies, leads to a second characteristic of such studies. They are multi-variant. Many conditions are studied as opposed to the laboratory experimenter's practice of isolating one or two variables for study. The experimenter is interested in setting up hypothetical conditions which can be stated in terms of hypothetical situations. The statement, "If a subject is rewarded by oral praise for correctly reciting the alphabet, then he will be successful in repeating the task," might set the conditions for a laboratory study of the effect of positive reward upon learning. In contrast, the field study investigator asks what variables must be considered in assessing the actual adaptation of an innovation to a school. For example, in looking at a curriculum intended to develop self-direction in students, the field study investigator questions the situations in which the students have a choice or lack of choice for instruction, the decision of the student, the behavior of the teacher in permitting the student to direct his own learning tasks, the rate of student learning and student achievement. Thus far, questions of the personal characteristics of the students have not even been listed.
The range of variables to be considered, plus limitations of time and money, present a third characteristic of field studies. Due to the range of variables considered, field studies will have a molar outlook. In contrast to the molecular concerns of laboratory investigations, field studies are concerned with the patterns of variables, with a multi-variant situation. With more experience and analyses of field study methods, it will hopefully be possible to combine this assessment of the total situation with increasingly more in-depth evaluation of each of the parts. To date, however, the methodology has not been developed to such an extent.

While field studies are molar in outlook, they will still have a pre-determined perspective or point of view. The situation will be seen in relation to the innovation selected for investigation. Investigators will not just observe a classroom situation, but will observe it to see how the innovation is adapted to the classroom. To a certain degree the results will depend upon the perceptiveness with which the study is designed so that the observer selected the most suitable instruments for observation.

The final characteristic of field studies to be considered as a basis for determining appropriate investigatory techniques is that of a lack of control and manipulation of the variables. Interference from the real world is not feared, but "invited" as a test of the ability of the school personnel to adapt the innovation to a particular situation. Interference is viewed as a means to test the maximum utility of the innovation by seeking the way it is adapted to various situations. The data from such interference provide a basis for decisions and modifications regarding the innovation.
In summary, the characteristics of field studies that must be considered in establishing investigatory tactics are: (1) the contextual nature of the study, (2) a concern with many variables as a means of increasing the range of situations to which the study applies (3) a molar, but pre-determined focus, and (4) an openness to interference as a test of the utility of the innovation.

Methods Appropriate to Field Study Characteristics The characteristics of field studies make evident many points of departure from traditional educational research studies, which are typically laboratory experiments manipulating several selected and isolated variables. Thus, different investigatory strategies are called for. It would not be appropriate to establish control and experimental groups, designating the innovation as the experimental treatment. In a complex situation such as field testing a new curriculum, or a new medium for teaching it would be impossible to control and isolate all the factors involved. Besides, the aim of a field study is to answer questions regarding the development, diffusion or adoption activities related to the innovation. Such information is most suitably provided by a complete description of the complex school situation with its many interacting parts. The statistical analysis of data gathered by means of an experimental design provides information for judging the outcome of a controlled study. But it does not provide information necessary to make decisions regarding the extension or modification of a project in a school setting. Thus statistical analysis of data gathered by means of an experimental design will not provide the necessary description of a developing situation. Instruments designed primarily for
describe purposes are needed to depict teacher and student behavior in regard to an innovation, the school's perception of the innovation, the types of learning situations to which the innovation is suited, needed changes to improve the innovation, and other related issues. Hence, heavy demands will be placed upon methods of observing, recording observations and reporting the findings. To analyze school perceptions of the utility of the innovation, interview data or attitude surveys are needed. Collections of school, teacher and student demographic data are required to consider the context within which the innovation is operating.

While a number of instruments for observations, interviews and record collections will be needed for field study evaluations, the complexity of the school situation and the number of interacting parts requires a selection of the most relevant areas for study. A school may have a basic mode of operation, but within this manner of operation there are many fluctuations and changes. The field study instruments then will have to detect the areas of change and immediately begin focused data collection in the changed areas. To handle such time analysis problems a sophisticated observer is needed who is consistently present at each site to assess all the variables in the situations and to follow-up in detail those most relevant to the introduction of the innovation to the school.

Thus, the use of a resident observer, structured observation and interview instruments for data gathering and a collection of demographic records regarding the school and its members are most aptly suited to field study evaluation.
Criteria for Educational Field Study Evaluation  As was pointed out in Chapter I, the quality of data gathered depends upon the methods used to collect these data. In the analysis of the data two basic criteria which have consistently been used to evaluate studies are the validity and reliability of the data which the instruments yield. In order to be useful, the data must be relevant and free from systematic error; that is, the data must be valid. Second, a good measurement tool must give similar results when used on independent but comparable measures of the same object; that is the instrument must yield reliable data. 6

These are general definitions of validity and reliability as they apply to measurement. More specific terms are used for different types of measurement situations. Thus, such terms as content validity, predictive validity and construct validity are used to indicate various approaches to obtaining valid measures. Further definitions of validity and reliability will be given as field study methods are discussed. The general definitions are presented here to show the importance of considering the issue of valid and reliable measurement techniques for educational field studies.

The theoretical validity and reliability of such field studies should be established before specific field studies are attempted. Otherwise, there is no assurance of the possibility of gathering meaningful data. Further there is no plan by which to judge the validity and reliability of the study as it is carried out. Therefore, the criteria of validity and reliability will be treated next as they apply to the over-all strategies of field studies.

6 For a more complete discussion of why these particular criteria were selected for examination see pp. 9-10.
Validity of Field Study Strategies  A discussion of the validity of data gathered by field study strategies concerns the accuracy, precision and usefulness of these data. Hence, it is important to keep in mind the multivariant and contextual nature of such studies. Data from any particular instrument used must be placed into the framework of the total study. The measures of the relevant variables must be examined in terms of the total context of the study.

To provide accurate information for the contextual, multivariant situations with which field studies deal, it was pointed out on page 19 that heavy reliance would be placed on observations, interviews and record collections to describe a situation. The use of validity in this way can be thought of as content validity. The aim is to describe accurately and precisely how a school adopts, modifies or rejects an innovation. Yet, it is different from the traditional use of content validity in educational tests and measurements. In that context, content validity refers to representative agreement between specific items on a test and the behaviors it is attempting to measure. Field studies also examine specific behaviors in terms of relevant variables. However, the testing situation is not as complex as the field study situation. In a field study there must not only be representative agreement between specific behaviors and data collected on those behaviors, but the instances must also be placed into context of the total school situation. The strategies used must preserve the relationship between the elements of the situation. Thus, the validity of field study data depends not only on the capability of specific
instruments to produce accurate, relevant data, but also upon data analysis which preserves the relationship between elements.

In assessing the validity of data gathering procedures and findings which preserve the structure of the on-going situation, it is first necessary to look at the specific design for the study.

This is the initial opportunity to provide a basis for collecting accurate data. While field studies are molar, it has been pointed out that they do not examine everything within the school situation systematically. Every study has a focus, such as the evaluation of the school use of a particular innovation. The design should (1) state the operational focus of the study, (2) determine what data are to be gathered systematically and (3) what data are to be gathered sporadically. The operational focus is partially dependent upon the specific innovation. There will naturally be design differences between a field study of the effect of saturation by films within a school and a study of individualized mathematics. Careful design determines the critical areas which require systematic strategies.

Due to the nature of the questions posed by field studies, the design should include provisions for looking to see what happens in relation to the innovation (observing); listening to people's perceptions of the innovation (interviewing) and gathering all written records regarding the innovations and the educational value structure of the school (record collections). The instruments for these tasks can be structured by listing the questions that are to be answered at the end of the study and then structuring formal classroom observation procedures and teacher interview schedules. The records that are to
be collected can be specified to alert the observers to types of information. To illustrate the types of information that might be considered important, several examples of systematic tasks the observer would perform follow:

1. Recording the total number of school board meetings and specifying those at which the innovation was mentioned, plus the comments made about the innovation.

2. Recording all uses of the innovation by teachers, students, school administrators or other members of the community.

3. Collecting available past and present records on student achievement scores, I.Q. tests and absence rates.

4. Recording the number of PTA meetings, the number which discussed the innovation, plus the content of the discussions of the innovation.

5. Recording the number of curriculum and grade level meetings, the proportion at which the innovation was mentioned and the comments made about the innovation.

6. Recording the number and type of visitors to the school, the school accommodation of visitors, and the questions visitors asked about the project.

7. Clipping all newspaper or magazine articles regarding the innovation.

Such activities provide a barometer of school and community reaction to an innovation which when combined with a description of classroom use of the innovation and faculty perceptions of it, present a picture of the total situation that an in-depth study of any of the parts of the field study do not.

The concern, of course, is to gather these data without deliberately manipulating the situation, without controlling the conditions in order that they do, in fact, produce the type of data the investigator wants. For instance, requesting that a member of the local
school staff keep records of the type listed above, would alert the school staff to things they might not have thought of themselves. The school might not have made any provisions for visitors. However, asking the school to keep a record of the accommodations made for visitors, might make them think that they should have planned schedules for visitors. This would prevent the field study investigators from discovering what the school staff itself would have decided to do. Thus, to implement the design an observer who is a part of the investigatory staff, independent of the local school system trying out the innovation is needed to collect such data. Moreover, a number of the records to be collected that were mentioned, do not occur at set times. This means that the field study design requires an observer who is at the school site daily for the entire length of the project. This provides assurance (1) that events can be recorded when they occur, (2) that the data will not be lost, nor obscurely reconstructed later from the memories of those who were present. It also provides for the gathering of data that were not anticipated.

The sheer presence of the observer in the school daily means that such data can be gathered and put into perspective. To use an example from records collected about the school, not only will the degree to which the innovation interested the PTA, for instance, be known, but also what percentage of parents were active in the PTA, and whether it was typical of the school PTA to be interested in curricular matters. In this way the design can provide for a constancy and context of observations that will give validity to the study.
Because of the necessity to provide a focus for the observation of the school use of the innovation, most of the investigatory activities can be planned and structured in advance. But in describing any complex situation it is impossible to predict all the relevant events. For that reason the observers should be alerted to look for the "unanticipated," the serendipities, that would increase the accuracy and richness of the report. Some serendipities can be anticipated by simply listing possible occurrences of interest. Yet there is no assurance that they will occur. Systematic procedures to describe these events can not readily be planned. A list of such occurrences will clarify this:

1. Use of the innovation by any substitute teacher.
2. Use of the innovation by children with physical handicaps if there are such children in the schools.
3. Use of the innovation by special adult groups.
4. News reporters asking to do articles about the schools.

Other items were not as easily anticipated. Yet the observer had to be alert to see the unanticipated, as well as be prepared to take care of systematic data collection. In order to be alert to the unanticipated, as well as confidently to make daily decisions regarding the relative importance of various data to be gathered, much care is required in the selection and training of resident observers. Since observers will be one of the major instruments for data collection, the validity of the study depends upon their perceptiveness as well as the design of the study.
Educational field studies require observers who have theoretical and practical knowledge of schools, teaching and investigatory techniques. Once such qualified personnel are found, they should become an important element in all planning sessions for the field study. They should help to formulate the focus of the project and to design the necessary instruments. Only in that way will they be able to make rapid decisions, demanded by the complex school situations, for selecting what is important to record or not record in terms of the emphasis of the field study. Additionally, such training permits the observers to test the sensitivity of observation and interview instruments for gathering data.

Because it is not possible to anticipate completely the events that will occur in field studies, situations may arise where the instruments will not detect the desired information. Information about the lack of sensitivity of the instruments then becomes important in deciding the validity of the resultant data. Here an observer is needed who can (1) note the lack of sensitivity in sending data derived from the instrument to the central project staff and (2) provide an alternative instrument. An example will clarify this. Suppose an observer is interviewing an elementary school teacher who teaches a special subject such as physical education, for which the innovative materials are not available. Yet, the interview schedule centers around the use of the materials. Bothered that the comments he was receiving did not reflect the dominant beliefs of the teacher, the

7For a detailed treatment of the particular qualities needed by resident observers see Chapter V.
observer might devise a new interview schedule for this situation. Before using it, he would have it checked by the central office staff for the field study to see that it fit the project design. If it was approved the observer would use the new interview instrument.

Had the observer not been sufficiently familiar with the field study aims and with the teacher and the local situation, he would not have noted the inability of the interview instrument to detect the perceptions of the teacher. Refusal to alter the instrument would have put the investigators in the position of manipulating the situation. The teacher would respond to the conditions (questions in this case) as the investigator set them. But this would not be the situation normally experienced by the teacher.

While flexibility to adopt a more sensitive instrument increases the validity, how does this affect the representativeness of the study? If the interview was designed to collect information on selected topics for teachers at all grade levels, it is important to know how the different teachers responded to the same questions. If the instruments for each teacher differed, how could the data be categorized? How could any general conclusions be drawn from the interviews? First, if the perceptions of the teachers are not detected by the interview instrument, it is of little value that the answers can be categorized and reported. The information reported would be of little use. Second, the hypothetical case was for a teacher who did not work with the standard areas of the elementary curriculum with which all elementary teachers are concerned. Careful design can predict the questions of concern to the teachers of basic curriculum areas. They will not as
readily predict the concerns of the special teacher. But the number of "special teachers" is a small proportion of the total numbers of teachers in a school. Thus, it is possible to collect the same data for most of the teachers in a standard form and in a replicable manner. Third, the interview responses could be checked against other data, such as classroom observations to see if there was agreement across the data.

In the previous discussion of field study strategies, the general tasks of the resident observer were listed as observations, interviews and record collections. A number of these tasks can be precisely defined in terms of operational categories which require little inference. Structured observations and interviews can be handled in this manner. But, human judgment, as the previous discussion indicated, must necessarily enter into much of the observer's work. In fact, that is why the observer is continually at the field study site. By living at a field study site, and by working with the elements of the study daily, he will have a better base for producing perceptive data than those not at the site. However, by the fact of his daily activities at the site he will likely become involved in the situation. If this is the case how can he report objectively? In considering the observer as an instrument for producing valid data, this question must be answered.

There are two answers. First, complete objectivity is an ideal. It is a "state which is always in the process of becoming. It is never fully achieved by an investigator in any final sense." 8

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8 See Evyn Bruyn, "The Methodology of Participant Observation," Human Organization, XXII (Fall, 1963), 231.
Second, the issue is not involvement, but the nature of the involve-
ment. The involvement will depend upon the observer's experiences,
awareness, and personality. An observer can be sympathetic, under-
standing, and yet detached. He can be curious about interactions
among people, matter-of-factly inquiring into an event in order to
understand without being committed to a particular outcome. The
training of observers in terms of the aim of the field study, plus
experience with teaching and research can produce understanding
without attachment.

Yet, historically educational research has tried to obtain data
that are independent of human judgment - or to meet this criterion as
closely as possible. In this way the data would be valid, objective,
not prejudiced by human perspective. Since it is likely that field
studies will be criticized for the reliance upon human judgment, it is
necessary to examine this issue further before continuing with a dis-
cussion of field study strategies.

The stress upon empiricism in educational investigations is
borrowed from the methods of the natural sciences and from philosophers
such as David Hume. It is a particular framework for considering
facts, evidence, or perceptions. The quantitative or statistical
approach is considered the appropriate way to gather and test evidence.

This is an appropriate framework for some investigations. But
it is one possible framework, not the only one. The use of human
observation follows from a different epistemology than that of the

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9Morris S. Schwartz and Charlotte G. Schwartz, "Problems in
Participant Observation," American Journal of Sociology, LX (January,
1955), 350.
research techniques of empiricism. As Bruyn points out; the observer "assumes that there exists in human feelings, a capacity to reveal knowledge which is independent (as well as interdependent with) the rational-empirical sources of knowledge."\textsuperscript{10} This is an initial assumption about knowledge; but the premise that only empirical data is valid is also an assumption.

Although judgments on some issues cannot be made with mathematical certainty, that does not mean that they are merely guesses or hunches. There is a place for reasoned judgment. The degree to which it is accepted depends upon the nature and extent of the experience upon which the judgment is based.

The objection to human observation and judgment is further answered in a discussion of evaluation methodology by philosopher, Michael Scriven:

There is the objection that hovers in the background of many of these discussions, the uneasy feeling that evaluation necessitates making value judgments, and that value judgments are essentially subjective and not scientific. This is about as intelligent a view as the view that statements about oneself are essentially subjective and hence incapable of rational substantiation. Some value judgments are essentially assertions about fundamental personal preferences and as such are factual claims which can be established or refuted by ordinary (though sometimes not easy) procedures of psychological investigation. But the process of establishing them does not show that it is right or wrong to hold these values; it only shows that it is true that somebody does or does not hold them. Another kind of value judgment is the assessment of the merit or comparative merit of some entity in a clearly defined context where this amounts to a claim that its performance is good or better than another's on clearly identifiable and clearly weighted criterion variables. With respect to

\textsuperscript{10}Bruyn, p. 227.
value judgments of this kind, it is not only possible to find out whether or not they are believed by the individuals who assert them, but it is also possible to determine whether it is right or wrong to believe them. They are simply complex confluences of various performance ratings and the weightings of the various performances; it is in this sense that we can correctly assert that the Bulova Accutron is the best wrist chronometer currently available or that a particular desk dictionary is the best one for somebody with extensive scientific interests.11

All science involves judgment. Even the simple task of reading a thermometer requires some judgment. The concern is whether the judgments can be refined to produce a perceptive record of significant events in terms of the framework of the study.

Mathematical applications do not insure rigorous proof. Nor does "insight" guarantee significant research. Instead of setting up a false dichotomy between the statistical and non-statistical approaches or between quantitative and qualitative studies, the fundamental concerns should be with the relevance, precision and usefulness of the data. Do the observations substantiate the conclusions? How precise are the observations? These are the basic investigatory concerns.

As Platt has emphasized, there is a need for strong logical inference:

. . . you can catch phenomena in a logical box or a mathematical box. The logical box is coarse but strong. The mathematical box is fine-grained but flimsy. The mathematical box is a beautiful way of wrapping up a problem, but it will not hold the phenomena unless they have been caught in a logical box to begin with.12


A major concern for the field study investigator seeking valid data, then, is to provide a logical box by means of which he can devise methods which are operable within the framework of the situation so that he can capture the phenomena. He must invent techniques which are adaptable to the characteristics of on-going situations.

While field study techniques include reliance upon human judgment, it is not an indiscriminate reliance. It can be argued that some involvement with the situation by an observer is not necessarily detrimental, but can be advantageous to a study. Yet, it is necessary to view the observer as a variable. Only in this way can the nature and extent of the involvement be assessed. Evidence of the validity of the observer's work depends upon his ability to evaluate his own involvement. Failure to consider the observer as a variable alters the environment of the study artificially. As Gussow has pointed out:

... in failing to view the events observed as occurring in a context that includes [the observer], it substitutes for the real observational field one that does not exist.13

The important consideration, then becomes the ability to analyze the involvement of the observer and the way in which he has structurally affected the environment of the study. The involvement of the observer in the use of structured instruments, such as observation and interview schedules should be depicted, as well as the overall intervention of the observer in the school. For instance, the involvement of the observer in the use of specific instruments can be ascertained by the use of a rating scale which would indicate the degree of involvement,

each time the instrument was used. Such a rating scale, however, would not indicate the number of possible ways the observer could influence the total school environment. To provide a measure of this a more detailed assessment is required. One possibility is to require the observer to keep a diary of his reactions to school personnel and situations, plus any reactions of the school to the observer. A member of the investigatory staff who is not associated with the school could then analyze the involvement of the observer and use this as a gauge for the validity of the data received from the observer.

The concern is not merely with knowing that observers have affected the situation, but also with evidence to analyze the manner in which they have affected it. As Gussow suggests:

...the responses by the environment to an observer can be an important tool of analysis when the research focuses on how the observer is incorporated into the social structure and what role or roles he is assigned in it. His social placement becomes a description of the structure at work.\(^{14}\)

Conscious interference can be assessed. The awareness of the interference permits assessment and valid conclusions. But the question of unconscious interference still exists. It is never possible to be sure that unconscious interference does not exist. However, the very fact that observers record conscious mistakes, increases their awareness of the methods of the study. This in turn alerts them to possible means of interference and decreases the likelihood for omitting records of interference.

\(^{14}\)Ibid.
Up to this point the discussion of field study strategies of observations, interviews and record collections by a resident observer has dealt with specific considerations for gathering valid data. A second concern in preserving the relationship between the elements of the study is the analysis of the data.

Although field studies must rely heavily on observations, interviews and record collections, it has been pointed out, no single one of these will show the entire effect of the innovation on the school. No single one can provide the context. To describe the context and its interacting parts the different kinds of activities must serve as the basis for an integrated analysis of all of the data. When systematic, formal observations, interviews and record collections are combined with, and compared to the informal, sporadic observations, interviews and record collections, there is sufficient accumulative evidence\textsuperscript{15} to draw conclusions.

If there is a lack of agreement among the data, the observer must collect more data to find trends or devise more sensitive instruments. This provides a check on the accuracy of the data that can be made independent of the observer. A central staff can analyze the data for the internal consistency of the observations and interviews. Or the data can be checked for correlations among observations and interviews. For example, if resident observers report that during formal interviews teachers often talked about particular lessons which the observers had seen, the data on the interview and observation forms then provide a basis for testing and linking the agreement of

data collected by different instruments. The linkage of data
gathered from different viewpoints is further evidence of the
validity of the findings.

Accumulative evidence by itself is not a sufficient test of
field study validity. If the intervals at which the data are gathered
are widely spaced there is no assurance that the instruments detect
normal situations, a change in teaching, or the direction of the
change. An observer who was at the site one day a month, or even
one day a week, could not produce the evidence required to assess a
complex situation. However, by daily observations at the site, the
observer could produce dense, focused data. Moreover, by collecting
the data for a considerable length of time, the investigators come
to know if they are seeing the school in normal situations. It is
the density and focus of the data collected over time that provide
confidence in the validity of contextual studies.

This continual analysis of the situation means a sufficient
repetition of events related to the innovation to provide valid data.
In this way the frequency of occurrences or the change over time
contribute to accurate data collection. Thus, the manner in which
the innovation becomes, or fails to become, an integral part of the
school can be studied.

The continual analysis permits a description of the innovation
when the project is a "new thing," a novelty which receives much
attention; and more important, the way in which it becomes an inte-
gral part of the school system.
The potential for continual time analysis within field studies, and for verification of data by cross-referencing results from observations and interviews, from formal and informal situations, from anticipated and unanticipated situations. Together the data from these sources provide the focus and density necessary for accumulative evidence. In this manner, field studies can produce valid data.

Thus far the discussion of the validity of data gathered by field studies has been concerned with content of the data. This is the first concern of investigators. If accurate data are produced, then the issue of the generalizability, the predictive validity of the study, arises.

One of the main issues in field studies is to discover how schools adapt innovations and how innovations serve the needs of the schools. Thus it is important to sample different kinds of schools to determine whether the innovation suits the specific needs and contexts of different schools. It is important to know how the large or small school, the inner city, suburban or rural school, the traditional or innovative school react to and adapt new projects. Moreover, a sample can be selected to differentiate between students with high and low I.Q.'s and various experiential backgrounds. Demographic data on the schools, the community in which they are located, and teacher and student characteristics can provide the descriptions upon which to select the sample so as to include the relevant variable characteristics.

Instead of a random sample which is generally sought in experiments, field studies more appropriately require stratified samples.
Within the various strata, however, the sample should be randomly selected. By describing the various types of situations and persons to which the innovation is suited, the generalizability of the study is established. By selective sampling, moreover, the limitations of the utility of the innovation can be detailed. It is less likely to be embraced or criticized as a panacea for all educational ills. Instead, the data will show the way in which different types of schools used the innovation and will provide a representative sampling of the conditions that limited or promoted creative utilization.

Reliability  Reliability like validity has been a major criterion used for judging educational evaluation instruments. This criterion refers to the degree to which an evaluation instrument stably or consistently measures whatever in fact it measures.

Reliability has been an issue of greater concern within the area of educational testing and measurement than it has been in experimental investigations. However, since educational field studies require the use of instruments developed for the specific study it is also important to consider whether the instruments can meet the test of reliability. These instruments are primarily the observation forms and interview schedules of the resident observer and the reports of the observer since he acts as a major force in collecting data.

A review of the literature on the use of observation instruments provides some answers to the question of whether field study data could be replicated by a different observer. "Measuring Classroom Behavior by Systematic Observation" by Medley and Mitzel in Gage's Handbook of Research on Teaching reviews a considerable number of observational
studies in education. It is stated that a number of studies had correlations of agreement among observers of 0.80 to 0.90. The high correlations were in instances where the observers instruments involved specific, factual statements. Little inference was involved. Heyms and Lippitt, in a review of observational studies in social psychology also point to high reliability between independent observers in cases where the observation instruments used operational categories. "The general evidence on reliability of observer scores indicates that the less inference required of observers, the higher the degree of agreement." Or as Campbell concludes:

Psychological research on the accuracy and person to person agreement in independent reporting seems summarizable by the statement that the greater the direct accessibility of the stimuli to the sense receptors, the greater the intersubjective verifiability of the observation. The weaker or the more intangible, indirect, or abstract the stimulus attribute, the more observations are subject to distortion.

The same results have also occurred in anthropology. Where the specific detail is given the work of different anthropologists with the same culture agrees. Thus, in speaking of the agreement between


Lowell Holmes' 1958 study of Samoa and Margaret Mead's earlier study of Samoa, Campbell notes the agreement of these anthropologists on descriptions of the material culture and observable customs. But on "several broader aspects of ethos they disagree completely."\footnote{Ibid.}

Thus, (1) if the evidence from education, psychology and anthropology can be accepted and (2) if it can be shown that educational field study instruments and techniques are stated operationally so that they require little inference on the part of the observers, the reliability of the data could be accepted on the basis of existing knowledge of the requirements for reliable instruments.

It is anticipated that the cost of field studies will limit the number of resident observers to a site to a single observer. If this is the case, there will be difficulty in knowing whether other observers would have produced the same data. It is possible that a field study of an innovation will be conducted at several sites. While this would increase the number of observers, there would still likely be one per site. And with selective sampling the sites will purposely differ. Observers would not in fact produce identical data. The observers could rotate among the sites, but then the constancy which provides validity to the data is jeopardized.

For these reasons, the importance of systematic instruments which require little inference increases. At the same time, when there are several observers, due to several field study sites, reliability among observers can be ascertained by pilot studies with the instruments. Such pilot studies are highly recommended.
There is another question regarding reliability that must be asked when several field study sites are involved. If the observers alternate between the several sites will they describe the sites in the same manner? Will the length of time spent at one site or the ordering of observations make a difference in results? Evidence from studies which relied upon observers of cultural situations would seem to indicate that the ordering of observation sites does make a difference. For instance, "Russian experts" produced different judgments on life in Russia after a trip there.\(^{19}\) It turned out that the differences in whether Moscow or Leningrade was considered more drab correlated with differences in the itinerary of the experts. The city that was visited first was considered more drab.

Analogously, it could be argued that the observer comes to see the school situation differently because of the length of time he has spent there. This has positive and negative contributions to field studies. Positively, it is only by prolonged observations that the observer can know the school in detail and be sensitive to how the school reacts to the observer; providing evidence by which to assess the influence of the observer. Negatively, the observer can become too close to the situation to describe it objectively. Or the observer can suffer from "observer fatigue." He may have been doing the descriptions so long that they have become mechanical. Tiring, the observer may not maintain his earlier perceptiveness and enthusiasm.

This problem of being continually at a school in order to maintain constancy of data, while, at the same time, being apart from the situation for objectivity, can be managed with the help of the central

\(^{19}\)Ibid., p. 342.
office staff for the field study. Members of the central staff can visit the field study site at various time intervals and actually perform the work of the resident observer. In this way a reliability check upon the use of the instruments can be gathered. Furthermore, the data collected by the observer can be sent to the central office staff at regular intervals for analysis. By studying the reports, alerting the resident observers to omissions or questionable conclusions, the central staff can provide a balance to the data.

The discussion of the reliability of instruments appropriate to educational field studies indicates several problems in demonstrating the reliability of the instruments. It would be desirable to have two observers at each site as a basis for checking the agreement of data gathered by different observers. Yet, the cost of such studies will likely limit the number of observers to a site to a single person. Thus, there will be no other person consistently using the instruments in the same situation as a basis for checking the agreement among observers. However, (1) by pilot tests of the instruments prior to the field study, (2) by consultant help from the central staff and (3) by the use of operational categories for the instruments, the reliability of educational field studies can be increased. Reliability is a matter of degree.

Summary From these considerations of field study characteristics, appropriate investigatory methods and their relation to the concerns of the validity and reliability of such investigations, it is seen that it is possible for field studies to meet satisfactorily the requirement of validity and reliability as they are applied to
educational inquiry. The following chapter will examine in detail the specific techniques and instruments that are appropriate to field studies to see how the specific techniques meet the investigatory criteria of validity and reliability.
CHAPTER III

SPECIFIC FIELD STUDY INSTRUMENTS

Chapter II pointed out that the contextual and multi-variant characteristics of field studies require heavy reliance upon observations and interviews for data collection. While neither technique will provide sufficient data for the evaluation of the adaptation of an innovation to a school, it was argued that accumulative evidence based on a continual time analysis could provide a valid description of the adaptation of the innovation. The data gathered by means of several techniques can meet the classic educational research criteria because of the focus and density of the evidence.

While it is necessary to examine the validity and reliability of educational field studies as a whole, it is also necessary to examine the specific tools which are a part of the field studies. These tools are primarily observation and interview instruments. Since both of these instruments are used by an observer who stays at the school site for the length of the project, the influence of that observer must also be considered. These are the concerns of this chapter.

OBSERVATIONS

One of the main tasks in educational field studies is to carry on classroom observations in order to detect the patterns and variations
in classroom use of the innovation. These descriptions of teacher and student activities provide evidence upon which to judge the usefulness of the innovation. Achievement scores and the information from curriculum guides, teacher objectives, and lesson plans do not provide sufficient data to indicate the usefulness of an innovation. They do not tell how the teachers and students behave; nor do they indicate the frequency and quality of the behavior.

Existing Observation Instruments Formal and informal observations have a long history in education and the social sciences which can be examined both for successful instruments and techniques and for limitations. Such an examination can provide information upon which to select or construct observation instruments for educational field studies.

Basically, all observation instruments follow from a theory of what it is important to observe. From the theory, categories of behavior or the environment are defined, coded and then records are gathered. Generally, the strategies for observation belong to one of two categories: focus upon a particular aspect of the situation or observation of all facets of the event. A holistic concern for the total situation has been the traditional approach of the anthropologist in the belief that one cannot know in advance what particular factors will be important to an "unstudied" or "foreign" community. Thus, he could not know before the study what would be important to observe. Because the anthropologist does not select or devise a particular observation schedule prior to his field study, his approach
has been called "unstructured observation." In a similar fashion, a number of the case studies of the clinical psychologist fall into the category of unstructured data collection.

Several psychologists have attempted to develop a system to study behavior with consideration of the total environment. Barker and Wright have been proponents of this approach, called "psychological ecology." According to their system, every situation that is observed is divided into the following categories: behavior episode, standing behavior pattern, behavior setting, behavior object and psychological habitat.¹

¹Extensive explanation of these terms are provided in: Roger G. Barker and Herbert F. Wright, Midwest and Its Children (Evanston, Illinois: Row, Peterson and Company, 1965), pp. 4-11. The definitions Barker and Wright give are:

The behavior episode: the fundamental unit of all psychological ecology which is defined as "an easily discriminated part of the stream of behavior and situation." It has three attributes: constant direction, normal behavior perspective and approximately equal potency.

Standing behavior pattern: "the persisting, extra-individual behavior phenomena that occurs regardless of the people involved. The two elements to be considered are (1) the place-thing-time constellation to which the behavior pattern is attached, termed the milieu and (2) synomorphism (perceived fittingness) between the patterns of behavior and the attributes of the non-physical context in which they occur.

Behavior setting: a standing behavior pattern together with the context of this behavior, including the part of the milieu to which the behavior is attached and with which it has a synomorphic relationship.

Behavior object: a standing pattern of behavior and the part of the nonpsychological milieu to which the behavior is anchored; they are behavior-milieu synomorphs.

Psychological habitat: the naturally occurring psychological context of behavior; a dynamic system within which the person and the environment are interconnected.
On the basis of these definitions, observers are trained to record all observable behavior, vocalizations and bodily movements. Brief notes are usually jotted down at one minute intervals. Then immediately after observing a situation, the observer tape records his impression of the experience. During the playback a "listener" is present to question the observer on unclear sections of the report. This dialogue is also recorded and then the tapes are edited.

This system provides for extensive records of behavior and stresses the importance of considering the context. However, the cost factors involved often make it impossible to use. A great deal of time is required to observe, tape observation reports, edit and transcribe them. Then the lengthly reports must be analyzed for patterns and generalizations. When it is realized that in one study using this technique, each incident reported averaged 18 pages, the amount of time and space required for recording can easily limit the breadth of the study.

In contrast to this system of observation, many of the noted observational techniques devised by educators have focused on limited aspects of the situation. Particular aspects of behavior are selected for observation in order to answer specific questions. Thus, Hughes concentrated on teacher behavior devising an instrument to classify behavior into 7 major functions: controlling functions, imposition, facilitating content development, personal response, positive affectivity and negative affectivity.²

²Marie M. Hughes et al, A Research Report - Assessment of the Quality of Teaching In Elementary Schools (Salt Lake City: University of Utah, 1959).
Flanders listed 10 categories to emphasize classroom interactions: teacher accepts feeling, teacher praises/encourages, teacher accepts/uses ideas, teacher asks questions, teacher lectures, teacher gives directions, teacher criticizes/justifies, student responds, student initiates, and silence and confusion. The observer notes one of these behaviors every three seconds to determine the "interaction analysis" of the classroom.

Jackson, in contrast, viewed teacher-pupil interaction from three categories: instructional, control, and management. Medley and Mitzel developed an elaborate observation schedule, OScAR, which listed items under three major headings. There is an activity section to list what teachers and pupils do. A grouping section specifies the nature and size of the groups observed. Finally, a materials section itemizes the equipment and learning resources available. Using a more complex technique and relying on magnetic recordings B. O. Smith divided classroom behavior into 13 categories based upon the logical structure of the classroom conversation.

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3 Ned A. Flanders, Teacher Influence, Pupil Attitudes and Achievement (Minneapolis: University of Minnesota, 1960).


Regardless of the categories selected or the variation in the manner of recording the observation, all of these observations focus on a particular aspect of the classroom situation. It is impossible to see all classroom behavior. Jackson claims that in his observations, for example, he discovered that it required 3 minutes to look around the classroom just to see if each student was paying attention. Considering that a student may move from attention to inattention 4 or 5 times a minute, and that an average classroom has about 30 students, Jackson stated that an observer could detect approximately 8 percent of the events in a normal classroom.\(^7\)

If the primary concern is the manner in which an innovation is adapted by the teacher and students, it is not sufficient to adapt an existing observation schedule for teacher-pupil interaction, such as those mentioned above. An instrument is needed which focuses on the relation of the innovation to the instructional situation. It is highly probable that the differences between innovations will be sufficiently large to require special observation schedules for each innovation. For example, the saturated use of classroom films is notably different from individualized instruction. For accurate information, the observation instrument must focus on the specific innovation as it related to classroom behavior.

Validity of Observation Instruments There is no simple formula for devising observation instruments. However, there are several considerations in selecting categories for valid observation schedules.

\(^7\)Jackson, pp. 102-103.
One variable is the amount of detail or subdivision desired. If the categories are too gross, useful comparisons may be lost. On the other hand, if the information is too detailed, the clusters and patterns of data are obscured. Thus, the investigator needs to try out a range of classification divisions to see which ones offer most utility for his purposes.  

A second consideration in selecting categories for valid observation instruments is the level of inference that will be required of the observer. "How much judgment does the observer have to use in transferring what he sees or hears into symbols that are meaningful and measurable?" The lowest level of inference is simply to report behavior, such as "A speaks to B." A high level of inference would involve a detailed explanation of why A speaks to B. The lower the level of inference, the easier it is to observe, record and categorize the events. As increasing dependency is placed upon the observer's judgment, it becomes correspondingly more difficult to record and categorize the data.

The selection of categories for an observation instrument is one major concern in considering the validity of the data. Another concern is the degree to which the presence of an "outsider" in the classroom

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9 Ibid., p. 225.

10 Ibid.
alters the typical classroom behavior. This issue is particularly raised in relation to the observer who is present frequently, who writes considerably during the observation and who does not tell the teacher what he is writing.

The task of adapting to a long-term observer is not an enviable one. Probably few teachers would truly and unanxiously welcome continual observation when they know their words and actions are being recorded and that they will not be told what is being written about their performance or that of the children they are teaching. In this respect narrative descriptions are probably more provoking of discomfort than are an objective type of record.11

There are several ways to handle the alteration in the classroom situation caused by the presence of an outsider. The amount of interference can be assessed and thus taken into account when the findings are reported. The amount of interference can also be reduced by conducting the observations at frequent intervals so that the teacher and class become accustomed to the observer and feel at ease in his presence.

The longitude of the observations helps considerably in reducing the impact of the observer on the situation. The observer becomes non-threatening to the school after a while and can arrive unexpectedly without embarrassing or upsetting the teacher. More important from the methodological standpoint, the continuation of observations over time allows the observers to perceive the subleties within the situation. They become aware of defense mechanisms that teachers had used as they observe the dissolution of some of these barriers.12


12 Ibid., p. 244.
If complete unobtrusiveness is not possible, then the concern is to be able to assess the interference by the observer; just as we try to assess error in a statistical design. Yet in examining the major observation instruments that have been used in educational studies, no systematic way to assess observer interference is provided. Medley and Mitzel do speak of the concern for observer interference stating:

The objection that teachers and pupils may not behave in exactly the same way when observers are present as they behave when no observer is present has no completely satisfactory answer. The problem of comparing observed and unobserved behavior is akin to that of the small boy who turned out the bedroom light but could never quite make it to his bed before the room got dark. To know how teachers and pupils behave while they are under observation seems better than to know nothing at all about how teachers and pupils behave.13

But that is the extent to which they treat the issue in a review of observation instruments used in classrooms.

One possible way to assess observer interference is to use a rating scale which can be checked for each observation. For example, the scale could be based on a continuum from 1 to 6, which represented a range from lack of acceptance to complete acceptance. Such a rating scale would function as do most rating scales. It would discriminate between extreme positions better than among situations of partial acceptance. It has a more serious drawback, however. The extent of acceptance by the observer in the classroom does not reflect the

manner in which his presence altered behavior. The school principal or a visitor can be accepted; so can another student. But what happens to the instructional situation is not likely to be the same in these instances.

Barker and Wright, with the approach of psychological ecology, provide a system for assessing observer interference. They classify the setting in which the observer is seen into 6 zones.

**Zone 1. Onlooker:** This is the most peripheral zone. Persons in this zone are within the behavior setting but take no active part in the situation. They are, at most, onlookers. They are tolerated instead of welcomed.

**Zone 2. Audience or Invited Guest:** The persons in this zone have a definite place. They are welcome, but have little power in the setting.

**Zone 3. Member or Customer:** Persons in zone 3 have great potential power, but usually little immediate power.

**Zone 4. Active Functionary:** This zone includes persons who have a part in the operation of the setting, but who do not lead it.

**Zone 5. Joint Leaders:** Persons classified in zone 5 lead the setting jointly with others in the zone.

**Zone 6. Single Leader:** This zone designates the position of all persons who serve as single leaders in the situation.14

A modification of this system to fit the particular circumstances of educational field studies would have several advantages. The operational definitions for the numbers on the scale permit more confidence in the use of the scale. They also provide a measure by which to check the agreement between different observers.

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14 Barker and Wright, p. 69.
Thus far in considering the validity of observation instruments, the level of inference required by the observer and the interference of the observer in classrooms have been discussed. Another issue that should be considered is the representativeness of the classroom situations observed.

To answer questions regarding the classroom use of an innovation, the lessons observed should be "typical" lessons. Ideally, for complete answers to questions regarding the classroom use of an innovation all lessons should be observed. This becomes too costly in terms of personnel and the time required for analysis of the data. Thus, a plan has to be established to provide representative data - to observe classroom situations that are typical of a particular classroom or a typical grade level.

The "panel technique" is a useful approach to gather representative data for each grade level. With this technique a teacher at each grade level for the field study site is randomly selected to be a "panel" teacher. This means that the observer will observe that teacher at regular intervals, such as once a week or once a month. This will produce data which shows either the particular pattern a teacher follows in using the innovation, or the change that takes place over time.

To provide a basis for comparison, the observer should observe another teacher at each grade level at the same intervals. This is a minimum. If possible, the observer should observe every teacher for each selected time interval. For each interval at which a teacher is observed, two lessons should be watched; one in which the innovation
is employed and one in which it is not. This provides a further basis for comparison of the classes with and without the innovation.

In addition, the lessons observed should be stratified across various subject areas if the study concerns elementary schools.

Still further ways of assessing the accuracy of data gathered during formal observations include cross-referencing data gathered in formal observations and that during informal or unstructured situations where the observer "just happened" to stop in a classroom. The informal data could be compared with data from formal observations during which the observer completed a definite form. Or the information gathered about the use of the innovation during teacher interviews could be compared with the observed utilization. These are applications of the strategy of cumulative evidence by which the validity of field studies is determined.

Reliability of Observations There are a number of issues regarding the reliability of the observational technique as used by the residents. Typically, observer reliability is defined as the "degree of agreement between independent observers."15 The degree of agreement is usually measured by a correlation coefficient. In field studies where each resident is at a different site this is not a feasible measure. Instead, as pointed out in Chapter II, there is a general reliance upon the previous studies of observer reliability. Such studies show that (1) the less inference required of observers

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the higher the degree of agreement and that (2) "other things being equal, the more the observer has to do, the lower the reliability." 16

The observation instruments can be pilot tested prior to the field study in order to secure data with regard to reliability. This is a common practice in educational studies where there is one person at a school responsible for gathering observational data. Finally, a rating scale which indicates the degree of interference in a classroom by the observer provides a way to check the amount of agreement across various observers for the interference they cause in a classroom. This can be done by pilot tests of the observation instrument or by comparing data from different observers if more than one site is involved.

INTERVIEWS AND TESTIMONY

The description of the adaptation of an innovation to the school setting involves not only what events occurred, but also how the school staff perceived the innovation and surrounding events. Observations provide the data regarding what teachers and students did in relation to the use of the innovation. In contrast, interviews are required to provide information regarding the opinions, attitudes, plans, hopes, and disappointments of the school staff in relation to the innovation. In this sense the teachers, students, and administrators are asked to testify to the merits and limitations of the innovation.

16 Ibid., p. 39.
Validity of Interview Data  Surveys, questionnaires and inter-
views of various sorts have long been used in the social sciences.
The validity of the data gathered from such instruments have depended
upon the willingness of the interviewee to respond openly to questions,
or to take the time to formulate opinions on various issues. Thus,
a number of questions can be raised about interview data.

In the specific framework of educational field studies, educators
have been concerned that reports of school personnel regarding an
innovation may simply reflect reactions due to the newness of the
project. Teacher reports, for instance, may be unduly biased by
enthusiasm for a new project. The concern that such testimony is
not valid is brought out by an anonymous statement found in the
report of the Conference for Novel Strategies and Tactics for Field
Studies of Newer Educational Media Demonstrations.

I think part of the testimony is just a sheer bubbling
over of commitment, enthusiasm that presents us with
individual anecdotes and examples and can quickly be dis-
counted as irrelevant, for really understanding what's
happening in these schools.17

Still, it is recognized that contained within the enthusiasms
for something new, something novel, there may be an enthusiasm for the
product based upon its instructional utility. This type of data should
not be discounted. There may be perceptions which last over time,
which cannot be dismissed simply as enthusiasm for something different,
or rejection because the school must adjust to the innovation. Thus the
report on this same conference continues:

I think there's another part of this testimony that
is not mere effusiveness, that is the bubbling up of

17Sidney C. Eboch (ed.), Novel Strategies and Tactics for Field
Studies of Newer Educational Media Demonstrations (Columbus, Ohio: The
enthusiasm. And perhaps the task of the researcher who wants to help people in schools is to listen to this kind of testimony and say "How much can we discount?" Say this politely, to be sure, because we don't want to dull the edge of enthusiasm that exists here. But how much of it can we listen to as indicators of solid evidence of change that maybe we could get data on.

I don't know . . . could we, is there any technique, is there any way by which we could screen out this kind of effusiveness and hold the nugget of evidence that is left? Because I do think there are pieces . . . . I don't think this is just the fantasies of people . . . .

I do think that embedded in this enthusiasm there are hunks of data that could be looked at and could be examined.18

The terms "testimony" and "evidence" are particularly apt for a consideration of the data that can be gathered by either a formal or informal interview. These terms purposely draw attention to the similarities between the use of the school personnel in field studies and the use of witnesses in law to provide evidence. An examination of the criteria for accepting testimony by a witness in court also provides ways to judge the acceptance of testimony within field studies.

By definition a legal witness is one who has observed the event under discussion. In law this observer is qualified to testify because he has first-hand knowledge of the event which the jury does not have. In a similar manner, the project residents in a field study ask the school staff to testify to all the facts upon which they have personal knowledge. The teachers who spend a minimum of five hours each school day with the students can usually provide better information.

18 Ibid.
of the student characteristics than can the project resident whose
time is divided between various tasks. The teachers who daily use
the new educational materials or who are a part of a special school
project, have more first-hand information about the way in which the
innovation operates within the classroom than any other person in
the school. Continuing the analogy to law, the teachers can provide
direct evidence or real evidence.

As these terms are used in law real evidence is that addressed
to the senses. The revolver with which the deceased was shot is an
eexample of this. Evidence which is based upon sensory data is the
most acceptable. The witness must have observed the scene to which
he is testifying. He must have heard a statement made by one of
the parties to the lawsuit, for instance, to testify as to the truth
of the statement. If he learned of the facts or statements from a
third party the material is called hearsay evidence. Such evidence
is inadmissible.

In the context of educational field studies, the testimony of
teachers is accepted when it relates to student comments they heard
in class or when they describe a student's behavior which they observed.
This is real evidence. Anecdotes which teacher A tells about a student
in teacher B's class constitutes hearsay evidence. Each teacher can be
asked to report the behavior of her students as it relates to the
innovation. There is no reason to accept second-hand reports which
may easily be exaggerated.
The term direct evidence is also used in legal texts. This form of evidence along with real evidence has priority in law. Direct evidence is that evidence which is precisely to the point at issue. An example is a witness who saw the defendant riding the stolen horse. 

As applied to the testimony of school personnel in field studies, direct evidence refers to reports, comments, affirmations which directly confirm or refute a specific question. Suppose that a teacher is asked to testify to the advantages or disadvantages related to the adoption of an innovation. General answers such as "it's wonderful," "it doesn't fit my needs" or "it takes too much time" are not particularly useful for analyzing or modifying the function of the innovation within the school. However, the more specific the responses are the more acceptable they are for field studies. Then it is possible to draw inferences from them.

A statement such as the following is direct and explicit.
"Textbooks don't have enough pictures of people of different countries. Films provide me with the pictures." From such a comment inferences related to particular uses of films can be drawn. Similarly, in the Handbook of the Law of Evidence McCormick states that the law can draw conclusions more accurately from the statement, "He was driving on the left hand side of the road," than from the comment "He was driving carelessly." 


Such **direct evidence** is contrasted in law with **circumstantial evidence**. This is evidence relating to a series of facts other than those at issue that tend, by inference, to establish a fact at issue. An application of this to education would be the school adaption of an innovation and the sudden decrease in classroom discipline problems. Circumstantial evidence of this sort is sometimes permitted if the court is satisfied that when the chain of facts is complete, it would be sufficient to prove the fact. But it is then contingent upon the agreement of the lawyer to complete the chain of facts.

Using the example of a sudden decrease in classroom discipline, several months after the project was under way a series of issues regarding discipline would have to be considered. What types of discipline problems had existed? In what manner has the innovation brought about a decrease in the problem? Is it simply the novelty effect of the project that has lessened concern for classroom discipline? If it could be shown, for instance, (1) that the project permitted each student to progress at his own rate instead of waiting for group instructions and (2) that the individual work provided various approaches to learning; not simply working with paper and pencil at a desk four hours a day then a chain of evidence would be started by teacher testimony which may be acceptable evidence. It is a circumstantial chain, but one in which all instances lead to a single conclusion.

The principles of law treated thus far for their relevance to the acceptance of testimony in field studies apply to the use of any

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21 Tracey, p. 313.
witness. Law permits anyone who has observed a situation to testify to the fact involved. However, beyond this, law uses the expert witness who can give opinion evidence in his area of specialty. Upon examination this principle is particularly suited to decisions regarding the acceptance of testimony in educational field studies. McCormick points out in the Handbook of the Law of Evidence:

An observer is qualified to testify because he has first-hand knowledge which the jury does not have of the situation or transaction at issue. The expert has something different to contribute. This is a power to draw inferences from the facts which a jury would not be competent to draw. To warrant the use of expert testimony, then, two elements are required. First, the subject of the inference must be so distinctly related to some science, profession, business or occupation as to be beyond the ken of the average layman, and second, the witness must have such skill, knowledge or experience in that field or calling as to make it appear that his opinion or inference will probably aid the trier in his search for the truth. The knowledge may in some fields be derived from reading alone, in some from practice alone, or as is commonly the case, from both.22

As McCormick points out, although expert witnesses may give opinions while testifying, the basis for allowing opinions has certain requirements. The witness may only give opinions upon those matters in which he has special training or experience. And, the matter must be definitely related to a particular occupation which requires knowledge beyond that of the average layman. Arguing that teaching requires special knowledge and skills, the teacher can be viewed as an expert on the day-to-day experiences of teaching.

The teacher who has had one year of experience with the use of an innovation is an expert by the very fact that she has more experience

22 McCormick, p. 28-29.
with daily use of the innovation than anyone else. But at the same time, the individual teacher is an expert in a limited area of education, working in a single content area or with a particular age level. Thus, the high school science teacher is viewed as an expert upon the ways to teach biology to 9th or 10th grade students, but not as an expert in the curriculum development of elementary science. The teacher with 10 years of experience provides a different kind of testimony than the first year teacher. Similarly the teacher with a master's degree will probably have a different outlook than the teacher with a provisional certificate.

The area of expertise and the amount of experience can be categorized. Then the testimony of the teachers who fit various categories can be accepted or rejected in view of the qualifications. For instance, if the new teachers generally do not like the new project, but the experienced teachers do, there is a lead which can be used until one discovers why this is the case.

Is it because new teachers are so busy learning on the job that they have not examined the possibilities of the innovation? Have experienced teachers been explicitly seeking the help that the innovation provides? The collection and categorization of testimony makes it possible to raise such questions.

In looking at the testimony of teachers it is also important to consider whether a number of different anecdotes are being reported which may or may not be illustrations of one opinion; or whether the same anecdote recurs continually. If a number of examples are given, there is more credibility for the statement. If the same story is
repeated continually, its significance in terms of the total school reaction to the innovation becomes doubtful.

Additionally, the observer can chart whether all of the examples came from the first three months of the project or from the last months of the project. The focus of the data over time is an important factor in a valid analysis of the data.

In order for such testimony to be considered valid evidence by law courts the witness must testify in person. Testimony by the witness in person is considered the "best evidence available."\(^{23}\) To use a written statement from a witness who is too ill or infirm to appear in court, the attorney needs a court order. The emphasis upon having the witness appear in person is that this provides an opportunity for cross-examination. Do the facts or opinions stand up under questioning or contradictory information? The manner of questioning used by the attorney may not be appropriate for soliciting testimony for field studies, but the concern for a cross-examination is. Interview data cannot automatically be accepted as precise, accurate data. They need to be placed into the context of specific situations. Cross-examination of testimony thus becomes very important.

There are several ways to cross-examine testimony in field studies. First of all when the teacher expresses an opinion during a formal interview or casual conversation, the observer's task is to

make certain that there are no ambiguities to the meaning of the statement. He casually probes to be certain that he records the meaning as well as the words of the teacher. This is typical of most interview techniques.

However, field studies can cross-examine in several other ways. One way, particularly suited to a formal interview strategy is the "panel interview." This is basically the same strategy recommended previously for observations. The term "panel interview" refers to the selection of a single group of persons to be interviewed periodically. However, the "panel" members are interviewed individually, not as a group. The word "panel" refers to the recurring interviews rather than to a group situation. It is a form of the interview technique not too frequently used because it depends upon the ability to interview the same individuals several times during a period of several months or years. In many situations access to the same individuals over a period of time is not possible.

The panel interview is feasible in educational field studies because an observer will be at the sites daily and can readily arrange to talk periodically to the same individuals.

The members of the "panel interview" should be selected for two main reasons (1) to provide a sampling of teacher perceptions across grade levels and subject areas as a way to see how the innovation is perceived for different purposes, and (2) to match the observation panel members as a means to correlate data from observations and interviews.
Not only does the use of a panel interview and observation strategy permit cross-analysis of data gathered from different perspectives, it also permits a continual time analysis. In order to determine the manner in which teacher opinions change or are reinforced as teachers become more familiar with the innovation, panel teachers should be interviewed systematically at frequent intervals. To allow for the possible influence upon teachers of regular questions regarding the innovation non-panel members should be interviewed occasionally in order to assess the effect of the interviews upon the teacher. For example, suppose that panel members are interviewed at 6 regular intervals. To detect the influence of questioning upon their perceptions, non-panel members might be interviewed at several of those intervals. In diagramatic form, the procedure would look like this.

Intervals at which panel members are interviewed

\[ x \ x \ x \ x \ x \ x \]

Intervals at which non-panel members are interviewed

\[ x \quad x \]

The difference between panel and non-panel members at the fourth interval could be checked to detect the effect of repeated questioning.

Besides a comparative analysis of data gathered during interviews and observations, there is still another way that the testimony of school personnel can be cross-examined in an attempt to increase the accuracy of the findings. There generally is a difference between information directly requested during interviews and information
volunteered during informal conversation. Voluntary information will more likely reflect matters of immediate importance to the teachers. Answers to questions raised during formal panel interviews may reflect ideas the teacher would not have thought of by himself.

To ensure comparable data and to satisfy the field study requirement of detecting change over time, the structured panel interviews are necessary. However, to balance this, the observer should record informal interviews, or conversations, they have with teachers during the general course of being at the school.

The possibilities suggested for cross-examining and cross-analysing the data gathered during interview situations are a further indication of the way in which accumulative evidence can be gathered in field studies to provide validity to the findings. Furthermore, instead of simply accepting teacher comments, the investigators should put the comments into the context of the relative expertise of the teacher. In this way the context of the information also provides validity to the testimony.

**Reliability of Interview Data** Measures to determine the reliability of interview data are similar to that for determining the reliability of observation data. First, the actual interview schedules should be pilot tested by individuals who have been trained for the field study work. In this way the agreement between interviewers can be determined. Second, the information from interviews should be written up in specific terms. If teachers relay anecdotes to illustrate a point, the illustration should be included in the interview report. The resident observer should not make
inferences in recording the interview. Instead, he should record the specific instances in operational terms so that a third party, the central staff for the field study, can also have access to the exact information received. Upon the basis of such information they can objectively generalize from the specifics. In this way the richness of personal data gathered by the resident observer, plus the objectivity of the outsider is preserved.

Third, there are times when the observer will want to comment on his interpretations of the interview. Not only will he want to, but he can provide a sensitive interpretation that those not consistently at the field study site cannot be expected to provide. Thus, interpretive statements should not be excluded. But they should be labeled as interpretations in the interview report. They can then be examined as such.

Finally, it should not be assumed that all interviews will proceed according to the plan. A resident observer may omit a question or help the teacher to answer the questions. By being at the site daily, he will know many of the answers to the questions. But the issue is to gather perceptions of the school personnel. Thus, the form for recording interview data should include a provision for recording any deviation from regular procedures. It is impossible for a resident observer to avoid making mistakes in following field study procedures. The concern, however, is not primarily with the lack of reliability due to deviations from procedures. The concern is to establish a way of knowing and thus assessing the extent of the error.
THE PROJECT RESIDENT

To systematically interview and observe school personnel, the writer has previously pointed out that a full-time observer is needed at each field study site. Observing and interviewing are two main tasks for the observer. However, as noted in Chapter II other data are also needed for a contextual study. Student scores on achievement tests, I.Q. tests, and classroom examinations are required, as is a certain amount of demographic information. To place the school concern for the innovation in perspective, information is necessary regarding such things as school board meetings, PTA meetings, and newspaper articles relating to the new project. Beyond collecting information on all these items, the observer is responsible for monitoring the unanticipated events which occur in relation to the innovation.

The resident observer is an integral part of the investigatory plan. Because the observer acts as an instrument to collect data for the study, his role should be carefully considered. A prototype field study described the observer in this way.

The participant observer is most like the anthropologist who visits a "foreign" situation, lives in it; watches everything, talks to everyone, and attempts to describe life as it is lived in the particular environment.24

In a general sense this describes the role of the observer, but the term "participant observer" has been used to mean a number of

things. Becker and Geer classify these uses of "participant observer" as describing three different functions:

The researcher may be a member of the group he studies; he may pose as a member of the group, though in fact he is not; or he may join the group in the role of one who is there to observe.25

That is why for clarity and precise understanding of the function of the observer in educational field studies, this writer has suggested that a term other than "participant observer" be used to describe the person in the observational role.

The task of the observer in educational field studies is to collect data by minimal interference with the situation. Yet he must be a part of the situation to some degree to understand the school personnel and their perceptions and use of the innovation. Accordingly, the observers can minimize interference by not becoming involved in the teaching and administrative functions of the schools.26

By not being involved in the essential school functions or those involving the innovation, the observers can follow school processes without manipulating them. At the same time to gain rapport with the school staff, to be viewed as members rather than as outsiders, the observers can be instructed to partake in the non-essential activities


26 Complete lack of interference is a goal, something to work towards, but rarely achieved.
of the school. Representative of the types of things that are not essential to the specific school function that observers can do to "fit in" are the following:

1. Joining the local teachers organization or PTA. This would be a monetary contribution, rather than active involvement in the operation of the organization.

2. Volunteering to take "lunch hour" duty along with the teachers.

3. Donating blood as a school member if the school is making an effort to donate to the Red Cross Blood Bank.

4. Helping with kitchen duty if the teachers have any "pot luck" suppers.

In all these cases, the observers are attempting to serve a useful function, to actually help the school. Yet they are not becoming involved with essential school functions. Nor are they taking jobs which the staff would consider status positions that would draw attention to the observer, instead of to the school staff.

In the degree to which the observers take part in school activities they are like participant observers. To the extent that they do not partake, the observers differ from the most frequent connotation of "participant observer." This specifies one of the main job functions and also the fact that the observer will be at the site continually. However, the research implication of this term also has negative connotations for school personnel. As Argyris has stated:

> Research to the subject means being controlled by, being dependent upon, being submissive to, the researcher. Healthy individuals naturally tend to react negatively to such conditions. 27

Such control and submissiveness, of course, are to be avoided. Yet, what the teacher knows of educational research from past experience could easily cause worry regarding the study.

To avoid these false impressions and gain rapport with teachers, the term "project resident" is suggested. This fairly innocuous term indicates the fact that the observer will be at the field site continually and that primary concern is with the innovation. Yet it avoids terminology that is unpleasant to the school staff. This is an important concern at the beginning of a project when the resident is new to the staff. Later in the study, if the project resident has shown himself to be trustworthy, considerate and genuinely interested in the staff, his official title becomes insignificant.

Assessment of the Project Resident as a Research Instrument The validity of the data collected by the resident depends upon his judgment both in selecting and recording the data. The issue of the use of human judgment in scientific investigations was treated in detail in Chapter II. It was concluded that human judgment is involved in all science. The basic question is not that of human involvement, but the nature of the involvement. Beyond the arguments presented in Chapter II for the use of human judgment in field studies, Heyms and Lippitt, who have studied observational techniques in depth, provide a cogent argument for human judgment in observation. From a consideration of child development they generalize to the capability of human observers to gather valid data.

Part of the learning task of every child involves accurate noting and interpreting social cues. Observation of children indicates that the very small child
learns rather quickly the significance of some very subtle cues. In fact, part of our theorizing about child development, especially in the area of parent-child relationships, is based on the proposition that the child responds in terms of valid inferences he makes concerning the motives and feelings of those around him. If we accept this general argument, the extensive use of the trained observer is primarily an application in the scientific of a general skill which most humans have to some degree. The application of this ability to the pursuit of knowledge imposes some refinements and some more rigorous requirements, but no new or occult skill.28

It can be argued that accurate notation and interpretation of behavior is within the realm of a project resident's capability. Yet, it is not sufficient to assume that any observer can provide sensitive, sophisticated observations of a school's adoption of an innovation. Project residents are required who have training and experience in professional education as well as specific job training.

The specific training for work in an educational field study is an important dimension in providing for valid, reliable observers. The project residents should be members of the team designing the specific field study strategies. Without such training the project residents can carry out instructions for observing, interviewing and gathering records. But they cannot be expected to make decisions regarding the unanticipated. Moreover, because field studies concentrate on on-going situations, there is no absolute certainty that the design can be implemented in every detail at the field study site. In order to make modifications that reflect the focus of the project, the project residents should be part of the decision-making process for the field study from the beginning of their association with the project.

28 Heyms and Lippitt, p. 371.
In addition, as the project residents work with each other and the principal investigator during the design-training period for the study, they will be able to train themselves to view things from the same perspective - the role of the innovation in the school. This similarity in perspective provides reliability across the project residents in their informal observations, interviews and data gathering. Reliability can be formed for their over-all tasks in the school, as well as for formal observation and interview instruments. Thus for example, the project resident can be trained to seek the primary or best evidence available. He will seek the evidence which affords the greatest certainty of the fact in question. The project resident can be trained to reject anecdotes of classroom behavior as retold by the principal. Instead the resident would go to the classroom teacher and ask what happened. The project resident would note, however, that the anecdote had been told to the principal. It was considered sufficiently important to the principal to repeat the story. That too, is a consideration in describing the school perceptions of a project. Or the project resident may be listening to a teacher describe a novel which was written by the 4th grade class as a follow-up to a film lesson. Instead of merely accepting the description, the project resident requests a copy of the novel. This can be examined for its relation to the film used in conjunction with the lesson and for ideas extending beyond those in the film. Instead

29Tracey, pp. 6-7.
of merely listing teacher comments about student English or art projects relating to the innovation, the project residents would collect examples - the original documents.

The project residents can be trained to view the field study from the same perspective by (1) study of the project rationale and (2) pilot tests of specific instruments for agreement between observers. Yet there remains a concern for the over-all alteration at the sites due to the presence of the project resident in the school. It has been pointed out that measures to assess the interference by the project resident are necessary parts of observation and interview instruments. It is necessary to go further and have the project resident assess and record his influence on the over-all situation. For this purpose, a format is needed whereby the resident can record daily his role in the school. Depending upon the particular study a form such as Barker and Wright's may be sufficient. 30 Or an open-ended diary format may be more suitable. The key issue is to consider the project resident as a variable in the study and thus assess his position in the school. A continual assessment of conscious interference will alert the project residents to ways they may be altering the situation, thus decreasing the likelihood of unconscious interference.

SUMMARY

From an examination of specific instruments suited to field study characteristics several conclusions are evident.

30 See p. 52.
The observation instruments used in educational investigations to date have focused on a particular aspect of the classroom environment or behavior, which depends upon the investigator's interests. No instrument will detect everything. For that reason, investigators have traditionally devised special instruments to focus on areas of interest for the study. Following this approach, it seems likely that there will be no single observation instrument which will fit all educational field studies. Instruments will have to be devised to focus on the relationship of the instructional situation and the innovation under consideration.

While the specific observation instruments for field studies will differ, there are several general principles which will apply to all of them. Operational categories must be sufficiently detailed in order to collect behavioral data, yet at the same time not so minutely detailed as to lose sight of the clusters of data. This plus stating the categories in such a way as to require a low level of inference by the observer will increase the accuracy and reliability of the data collection. In contrast to many existing observation instruments, it is suggested that the observation schedule include a measure of observer interference in the classroom. This should not be a rating scale which merely states the degree of influence on a numerical continuum, but also states the type of influence. In this way the seriousness of the observer interference for the entire project can be put into perspective.

Such observational data provide information about student and teacher behavior. However, interviews are necessary to gather the
school personnel's perception of an innovation. All too often such interviews simply reflect an initial enthusiasm for a new project. In order to collect the data embedded in the enthusiasm of the response, the legal rules for accepting testimony can be applied to interview data collection and analysis. Particularly pertinent to gathering acceptable teacher perceptions are the legal principles for using expert witnesses and for cross-examining the evidence offered. The cross-examination of data has implications for linking the several field study instruments as a means to gather cumulative evidence. Cross-examination is possible in several ways: (1) comparing information received during formal interviews and casual conversations, (2) comparing data from formal and informal observations, (3) comparing the data from observations and interviews to determine the balance between behaviors and perceptions and (4) tabulating the number of people who express a particular opinion to determine whether the informal interviews reflect the impressions of a number of teachers or a few, or whether the impressions are temporary or lasting. By these techniques it is possible to gather the data beneath the "sheer bubbling of enthusiasm" for a novel idea.

The representativeness of data gathered both by observation and interview can be established by use of the panel technique. This technique provides for a stratified sampling and a continual time analysis of data which are important for the study of on-going situations.
Finally, the project resident, himself, should be considered as a variable in field studies. In this way the error in validity and reliability of data provided by means of the project resident can be assessed. The important issue is not how to totally eliminate interference of the human variable, but how to account for it.
CHAPTER IV

AN EXEMPLARY FIELD STUDY: DESCRIPTION

During 1964 and 1965 the Bureau of Educational Research and Service at The Ohio State University was involved with several conferences relating to educational change. One of the issues concerning the Bureau was a way to study and evaluate innovative projects in ongoing school situations. It was in connection with this that the Bureau became involved with a prototype field study. That particular field study and the evaluative strategies and instruments used will be discussed in this chapter. Chapter V will discuss the characteristics required of a project resident, on the basis of evidence from the exemplary field study. Chapter VI will apply the tests of validity and reliability discussed in the previous chapters to this exemplar study to see whether field studies can meet standard investigatory criteria in practice as well as in theory.

**Project Discovery** Audiovisual education has a history of research dating back to 1918 which points to the advantages of using films, filmstrips and other media in teaching. Writings within the field of audiovisual education have consistently urged more use of media in the classrooms. Yet teachers, on the whole, have used such materials only occasionally. The materials have not become an integral part of the average classroom.
A number of reasons for this situation have frequently been given: (1) equipment and materials are too expensive (2) not enough appropriate materials are available (3) teachers have to order materials far in advance of expected use (4) materials do not arrive when teachers and students need them (5) materials are used when they arrive rather than when they are needed (6) equipment is too difficult to operate.

The exemplary field study was intended to eliminate the logistic and cost factors limiting the use of media. Encyclopaedia Brittanica Films Inc. and Bell and Howell Company agreed to supply a school with materials and equipment to remove the barriers to media utilization. Within a year, the project was extended to three other sites. This undertaking was referred to as Project Discovery by the companies. The aim was to discover what in fact would happen with a maximum availability of materials and equipment for the schools.

The companies supplied each school building with approximately 500 16mm motion pictures and 1000 filmstrips. These were located on open shelves as part of the central materials collection of books, tapes, records or picture files in the school. Each classroom was supplied with an automatic self-threading motion picture projector and an automatic filmstrip projector. Additional projectors were available for individual and small group use in the library. Projector stands, wall screens and darkening controls were also provided.

No restrictions were put on teacher or student use of the materials and equipment by the companies. Teachers were to discover their own procedures for effective film use. Students were free to use the materials in any manner approved by the teachers and the local
school administration. Finally, the study was to be conducted for a sufficient length of time to permit teachers to find their own pattern of usage. The time was not defined, but three to six years were mentioned in the planning stages.

The schools involved in the study were selected by the companies. A number of considerations determined the selection of the actual sites for the study. Varied geographic location and a stratified socio-economic sampling were important considerations. The site selections were also influenced by finding school administrations who were (1) interested in the project and (2) willing to let the teachers freely use the media in any manner they chose. Finally, the specific teachers at each site had to approve of the plan to be part of the study.

The final selections included three elementary schools: Mercer School, Shaker Heights, Ohio; Scott-Montgomery School, Washington, D.C.; and Thomas Edison School, Daly City, California. In Terrell Texas, the entire school system was provided with the materials and equipment. This consisted of three elementary schools and two high schools.

After agreements for the study had been made between the companies and the schools, investigators from The Ohio State University became interested in the project as an exemplar field study which would extend and refine methods for future field studies. Under a grant from the U.S. Office of Education the field study evaluation was conducted through The Ohio State University. The findings regarding a maximum availability of materials are reported in Implementation of Research Strategies and Tactics for Demonstrations of Newer Media. The methods and instruments will be discussed in this chapter.
When the investigators began structuring a plan for gathering data on Project Discovery, it was decided that someone would be needed at each field study site to collect the data. Similar to "participant observers" they would be responsible for observations, interviews and the collection of data regarding media use and its relation to school activities. For this purpose, four observers were selected, one for each site. As soon as the "project residents" as they were called, were selected, they became an integral part of the staff, designing and implementing the investigatory procedures. Besides the principal investigator and the four project residents, two other university professors worked part time on the study.

A central office staff was established for the project. This staff was to provide a continual analysis of the data which the project residents would be sending to them regularly. Members of the central office staff included the principal investigator, a research assistant, a secretary and part time clerical help.

Investigatory Training The investigatory staff had five weeks to prepare for the field study between the time the grant for the study was received and the time the schools would open with the use of the equipment and materials. During this time the strategy for the study was established and the necessary instruments were designed. The project residents then tried out the instruments in the schools during September. In October they returned to The Ohio State University to refine the instruments based upon experience at the field study sites.

Mercer School, Shaker Heights, Ohio, had the Project Discovery materials and equipment during the school year prior to the field study also. During the field study this school was in its second year with the project.
Then the project residents returned to the sites. During the schools' spring vacation, the project residents again returned to the university to establish procedures for phasing out their work. By this time it had been discovered, that the grant for the investigation would not continue into the next school year. Thus preparation for a final report began. After the spring vacation workshop the project residents returned to the schools. During four weeks of the summer the residents returned to the university once again to help work on the final report of the field study.

**Investigatory Plan** The basic plan for deciding upon the instruments that would provide a contextual focus upon the school use of a maximally available set of media was to list the types of information desired, the sources from which the information could be received and the instruments most appropriate for collection of the information. Three large categories of activities resulted: observing, interviewing, and keeping systematic records of events within the school related to the use of media.

Ideally, the field study would collect information in depth about all individuals in the study. This was not feasible. To provide a representative sample of classroom behavior and perceptions toward the use of films and filmstrips, a "panel" of teachers was selected for each site. The panel consisted of a teacher at each grade level (stratified for subject areas in the high schools) whose class would be observed at least once a month and who would also be interviewed monthly. Within grade levels the teachers were selected randomly to avoid any bias in selection. Comparative data were to be gathered
for the other teachers at each site. However, emphasis was placed upon first obtaining the interview and observation data from the panel members. If a decision was to be made in terms of a project resident's tasks, the work with panel members was to take priority.

Base line demographic data on students and teachers were gathered for all participants in the study. Media use information for all teachers and students were also gathered. A review of specific instruments used will show how this was done.

Observation Instrument The observation instrument used with Project Discovery focused upon the use of media within the classroom situation. Items included were stated in behavioral terms in order that the items could be checked with little inference on the part of the project resident. General classroom behavior was also recorded as a basis for describing the influence of the media on the classroom situation.

The observation form drawn up during the summer training session consisted of two pages. A number of student behaviors were listed and the observers were to tally observed student behavior according to the categories. Then the residents were asked to complete a check list for use of films or filmstrips. The check list included the content of the item, the purpose for which the particular item was used, the role of the teacher and the sequence in which the item was used (middle of a film, beginning of a film, entire film). Additionally, the residents were to estimate their acceptance in the classroom by
teachers and students on a 6 point scale. One represented a low level of acceptance, with 6 representing the highest level of acceptance.

The project residents used this instrument on a trial basis in September. During the October meeting this instrument was substantially revised. There were a number of problems with the instrument. It did not relate student behavior and teacher behavior directly to the use of the various media. The section on classroom behavior listed classroom disturbances such as "physical aggression." This would unnecessarily alarm teachers if they ever accidentally saw the instrument. Besides the main concern was not classroom disturbance. It was unlikely that media use would relate to such things as "physical aggression."

The residents were uncomfortable with the scale by which to rate their acceptance in the classroom. Acceptance or lack of acceptance did not reflect the manner in which they interfered with the situation. Finally, the instrument was not formulated in a manner that would lead to easy analysis with a computer program.

After much discussion and work a new observation instrument was accepted for use the rest of the year.\(^2\) The first page was simply a log form to record the order and time of major classroom activities. This was included primarily because the project residents requested this. They said they felt a greater confidence in observing if they recorded the flow of classroom activity. For this reason, strict

\(^2\)See Appendix I.
rules for completing the log were not stated. The log was to be used as the residents desired.

The other two pages of the observation form indicated and organized the characteristics of the lesson in a manner that could easily be analyzed. Much of it could be filled out quickly so that the resident was free to watch during the observation. He was not expected to be writing continually.

The code on the observation form referred to the code assigned to the particular teacher observed. The day of the week was noted by encircling M, T, W, T, or F. Then the date was given as well as whether the observation was done in the morning or afternoon. The initials PR were a reminder for the resident to put his initials on the observation form to certify completion.

The subject line gave the general subject matter of a lesson. The code used is listed below.

RDG = Reading
WRI = Writing
ENG = Language Arts
MAT = Arithmetic
SCI = Science
HIS = History

GEO = Geography
SOS = Social Studies
MUS = Music
ART = Art
HLT = Health
XXX = Other; to be written on form

The media line designated all the media used by the entire class. It refers to items directly used within the lesson. It was expected
that more than one would be used in most lessons. The Code for media was:

- FLM = 16mm motion picture
- TAP = Tape recording
- FST = Filmstrip
- BUL = Bulletin board
- SLI = Slides
- CHA = Chalkboard
- OTR = Overhead transparency
- M/G = Maps and globes
- PIX = Materials projected with an opaque projector
- MDL = Models, realia
- REC = Disc recording
- CRM = Controlled reading machines

The print line was for recording all the printed materials used by the entire group of students in the class. The three letter codes for print materials were:

- TXT = Standard textbook
- NEW = Newspapers
- REF = Reference books
- DUP = Duplicated materials prepared by the teachers
- SUP = Supplementary books
- WKB = Workbook
- PAM = Pamphlets
- MAG = Magazines
- XXX = Other: to be written in on form

A section on key media was to record the number and title of any film or filmstrip used which were part of the Project Discovery collection. Under time used, the project resident checked whether this was the first, second, or third use of the specific title with the class. Then the resident checked whether the entire film or filmstrip was used or only part. He indicated whether it was used with the sound designed to accompany the material or if the sound was not used. He noted whether it was teacher or student narrated and whether the material was used in a "stop-start" fashion, or if the
entire material was run from beginning to end. Categories were checked as they were observed.

The residents were also to note the manner in which the logistics of preparing for the use of the key media were handled. He noted whether the material was procured by a student (S) the teacher (T), some other person (O), or if the procurement was unobserved (U). The same procedure was repeated to indicate who was responsible for the physical arrangement of the classroom for the lesson (set-up), the operation of the project, the handling of any breakdown in the operation and the return of the materials to their central storage place.

Next any technical problems with the equipment were listed along with the reaction of the teacher and class. The solution as worked out by the teacher was also stated.

After this the project resident was to characterize classroom activity before the use of the films or filmstrips and activity after the use of the medium. A series of alternative categories were worked out for this: (1) did the interaction within the class involve the whole class or small groups working under the teacher's supervision (2) was the discussion teacher oriented or student oriented (3) did the discussion have a prescribed purpose of developing specific answers or was it intended to develop several alternative answers, and (4) were most of the questions asked by the teacher or students convergent or divergent. The same format was used to record post-media activity.
The observer then stated whether the company's teaching guide for the medium was used. If it was, the number was listed. The observer also listed information about the content elements of the discussion. In relation to the content he was asked to note the behavior of the teacher (TCHR) and student (STDT). For both he indicated whether they made oral contributions to the discussion (O) or used a form of print (P) such as the chalkboard. The categories of content for which the information was given were: content summary, vocabulary, key points/questions and test. A space to indicate any other activity was also provided.

A section titled "assignment" was used to list any class assignments that grew out of the observed lesson. Here the resident checked (1) whether the assignment was made by the teacher or whether the students could select among several activities to complete the assignment (2) whether the assignment involved the use of films and filmstrips and if this was an assignment for all students or whether they had a choice among media (3) if the students were assigned reading, the residents noted whether it was a single reading selection or a choice among selections (4) if the students were assigned to write something specifically, the residents again noted whether it was a single assignment for everyone or whether there were choices (5) if the assignment involved an activity other than reading, writing, or using a film or filmstrips, the resident indicated this, plus whether it was a single or varied assignment. A space was also provided to describe any assignments not included in these categories.
The project resident was then to record classroom activities directly preceding and following the observed lesson. This was to place the observed lesson into the context of the day's activities.

General lesson types for the media lessons were recorded by use of the following code:

- INT = Introductory
- MUP = Make-up
- DEV = Developmental
- ENR = Enrichment
- REV = Review
- SUM = Summary
- XXX = Other: to be recorded on the form

Operational definitions, plus examples were provided for all of the terms used in the observation instrument so that the project resident clearly knew the distinctions between the categories.

Finally, the project resident was asked to complete an "observer congruency scale." This scale noted by operational definitions for numbers, the extent of the observer's influence on the classroom situation. This scale was adapted from a similar scale devised by Barker and Wright. Six categories were classified as follows:

1 = ONLOOKER: This number indicates the least involvement possible with the naturalistic setting. The ONLOOKER stands completely outside the environment and is thus usually obtrusive even though he remains passive. The ONLOOKER lacks any acceptance by the setting he observes.

2 = INVITED GUEST: The GUEST is one who has begun to merge with the setting. He is part of the group yet always as an outsider within that group. Those who are part of a group can always detect the GUEST; he is accepted but still seen as from another setting.

3 See Chapter III, p. 52.
3 = MEMBER: This is probably the ideal relationship to one's setting if one is interested in observing. The member merges completely with his surroundings and is never obtrusive. He is in all respects inside the environment yet not acting as an obvious influence upon it. His stance is essentially a passive one.

4 = ACTIVE FUNCTIONARY: Here the observer is a member of the group but beginning to merge by his activity within the group. His actions are part of the group behavior and in this sense change somewhat the setting of which he is a part.

5 = JOINT LEADER: As a LEADER the observer begins to move outside the setting and from this vantage point he works on and directly influences that setting. He is not yet in complete control, but he shares that control with one or two other members of the setting.

6 = SINGLE LEADER: As the antithesis of the passive ONLOOKER who is outside the setting, the SINGLE LEADER is an active outsider who completely controls a setting. He is never part of the setting but one who manipulates the setting.4

Directions for the use of the observation instrument included a number of procedures. The classroom observations were to be made monthly for all panel members and an equivalent number of non-panel members. This was a minimum. Specific arrangements for the observations were to be made according to the practices of each school and according to individual choices of teachers. In so far as possible, observations were to be varied for (1) subject matter (2) time of the day and (3) day of the week. Finally, the residents were to attempt to observe two lessons for each classroom visit; one lesson with the use of project media and one without.

4 Sidney C. Eboch, Implementation of Research Strategies and Tactics for Demonstrations of Newer Media (Columbus, Ohio: The Ohio State University Research Foundation, 1966), pp. 41-42.
These were the ideal circumstances for observation. However, it was realized that there would be some deviation from this procedure.

**Interview Instruments** The interviews were structured to provide two types of information generally agreed upon by interview methodologists as the basis for asking questions: (1) to uncover beliefs and attitudes and (2) to obtain observational data that the interviewer could not get himself. The second type of question was secondary in importance in so far as the project residents were able to observe classroom lessons. Questions were asked about the use of the films during classroom lessons primarily to elicit teacher perceptions.

With this viewpoint several teacher interview schedules were drawn up. In order to detect change over time and have comparable data, it was necessary to request the same type of information from month to month. Yet it was expected that teachers would become tired of answering the same questions each month. In addition, the number of questions that the project investigators wanted to ask could not be handled within the 30-60 minutes usually recommended as optimum time for ensuring cooperation with the interviewees. For these reasons, the interview questions were divided into two schedules. Each schedule was used on alternating months, so that each project resident asked the same questions at each site during a single month.\(^5\)

Beyond this, it was realized that the first interview would require additional care in order to establish rapport with the teachers and to discover background information about the teacher.

\(^5\)See Appendix II for interview schedules used in the study.
The project residents did not want their questions to be viewed as a threat to the teachers. They needed and wanted to develop a cooperative basis that would last throughout the project. Thus, they made an effort, during the first interview, to explain that they were interested in what happened to the teacher's class as a result of the film project. They did not intend to pry into personal matters. They explained that they would be talking monthly to a teacher from each grade level so that the teachers would realize that others in the school were being interviewed. And finally, the residents warned the teachers that they would be asking the same questions from time to time, because these were the things in which they were continually interested.

Generally, the construction of interview schedules followed the advice of interview experts. The schedules proceeded in a logical flow so that they would (1) draw the teacher into the interview by awakening her interest (2) easily proceed from items which were simple to the more complex (3) to as smoothly as possible from one frame of reference to another to provide spontaneity and flow and (4) not affront the teacher with questions which would be embarrassing without giving a reason for the question. With these factors in mind, the schedules were drawn up and additional probe questions were outlined as alternative ways of wording questions in order to insure that the teachers would understand the questions and give answers.

While a logical structure was planned, the project residents were trained to be flexible in using this order. If the teacher began
to answer in terms of a personal psychological order, the project residents were to alter the order of the questions to fit the situation. General conversational lines were followed because it was essential that the panel members enjoy the interview and feel rewarded by it. The warmth of the conversation and the honest interest of the project resident in the teacher comments would provide the reward. At the same time the project residents had to maintain the rigor of scientific searching, making sure that the teacher answered each question and that he clearly understood the teacher's reply.

During the actual interviews, the project resident recorded in note form, the content of the interview. Immediately afterwards, before he would forget the details and anecdotes, he was to type up a record of the interview as it proceeded from question to question.

Besides collecting the teachers perceptions regarding the project, it was important to determine the school administrator's perceptions of it. The principal for each participating school was interviewed three times during the year to collect this information. The general principles for structuring the interview schedules were the same as those for the teacher interview schedules.

Other information regarding the administrators was collected and recorded on other forms. Any document originating with the principal was collected. The role of the principal at school, district, or community meetings was also recorded. These things were done both to describe concern with the project and to place this concern into context with other administrative cares.
School personnel such as the librarian, secretary, custodians and school bus drivers were interviewed informally to document their involvement with the project.

**Recording Media Use** Several basic questions for the film project concerned the frequency of media use specific media used and the reasons for their use. Some of this information was gathered by classroom observations. But that was a sample of usage. To collect data on the total number of films and filmstrips used, as well as the number used by each teacher and student, the field study team developed a separate color coded library card for teachers, students and any others who had access to the materials. The schools were in the process of developing such cards and readily accepted the form worked out by the field study team. Since the schools were going to use library cards anyway, the process was not viewed as manipulation of the schools.

The teacher card included basic information librarians request; name, title of the item and date checked out. For the field study staff several other items were included. The following categories were listed as reasons for use:

- Enrich
- Motivate
- Discuss
- Preview
- Inform
- Reinforce
- Introduce
- Review
- Personal Interest
- Other (Specify)
Viewing location was also listed with the following options stated:

Classroom 
Film Library 
Home 
Other 

Each teacher was given a guide to help in filling out the cards. All terms were defined to minimize differing interpretations.

The teachers were also given a supply of evaluation cards for optional use. After using the particular item they were asked to check one of several categories:

1. Used as anticipated, purpose achieved
2. Used as anticipated, purpose not met
3. Used for another purpose
4. Not used

Space was provided for any comments on the film teacher might want to list.

To keep the work required of the teacher in filling out the cards to a minimum, the teacher was primarily asked to check an option. Writing was kept to a minimum. In this way it was thought that teachers would be more willing to complete the cards.

The card for students listed reasons for use, viewing location and general information requested by the librarians. Categories for viewing location were the same as for the teacher card. Reasons for use were listed as:

Teacher Assignment 
Supplementary 
Make-up Work 

Personal Reason 
Can't Tell 
Other (Specify)
The film librarian was expected to help students complete the cards.

The card supplied for any other persons using the item was titled, "borrower card." Besides the regular information requested by the librarian, the borrower was asked to give his position or title. Reasons for use were given as:

- Instruct Students
- Demonstrate Project Discovery
- To be used to work with other groups or for person use (Please Specify)

Anticipated viewing locations were:

- Another School
- Home
- Classroom
- Film Library
- Other

Information on the use of school-owned library materials was collected from the school librarians to place the use of school-owned materials into context with those from Project Discovery. Statistics on book circulation and use of other media were collected for the school year before Project Discovery began and for the time the project was operating within the schools. The statistics included the number of materials available for circulation, the number of students and teachers using the library and the number of materials actually circulated.

In so far as there were any instances where library statistics related to specific classrooms, teachers or students, the project residents were also to collect this information.
Systematic Record Keeping Many of the answers to questions regarding the schools' adoption of Project Discovery could be answered by the observation instrument, interview schedules and media use cards. However, a number of questions could be best answered through record keeping instruments. The project residents kept 13 such record files which were called a diary.

Section I consisted of a physical description of each classroom, the library and the film center at the sites. A sketch of the room was made and then the project resident noted any change, on a monthly basis, in furniture arrangement, audiovisual equipment or realia. A blank sheet of paper was used for this notation.

Section II dealt with administrators. The interview schedules for administrators have already been described. Any documents originating from the principal's office were also kept here as well as records of any informal interviews with the principal. The roles of the administrator at school or community meetings were recorded in other sections of the diary.

The influences at work within the school outside of Project Discovery were treated in Section III. Other projects, administrative procedural innovations or curricular innovations are examples of the influences considered. For each item the project resident was to record the influence, its personnel and its effect on Project Discovery. The project resident was to write up these descriptions as he observed them and according to his own style of writing.
Since Project Discovery was receiving national attention, it was expected that the schools would receive a large number of visitors. Section IV thus dealt with requests for information about the project or visitations. To provide some information on the types of persons who are interested in innovations, their requests and their reactions, a form was completed for all visitors. The form listed the data of the request, the name of the individual and his organizational affiliation, the individual’s address, the nature of the request (to visit, to have specific questions answered), the mode in which the request came (letter, phone) and the disposition or reaction of the person to the manner in which the request was filled.

The project resident was not to complete these forms directly. The school employee who handled such requests, usually the school secretary, was to complete the forms. The schools were also asked to furnish the resident a copy of any letter sent in reply to a request. Such letters were to be appended to section IV.6

Section V listed all the audiovisual materials in each building that were owned by the schools. The location of these materials before Project Discovery began was to be recorded as well as the location after the project began. This was intended as a way of checking upon the change in the use of school-owned materials and equipment once a special project is given extra attention. An identical form was used to list audiovisual equipment owned by the schools.

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6See Appendix III for copies of special record keeping forms developed for the exemplary study; Section IV, V, VI, VII, VIII, X and XII.
Official interest of each school district's board of education was recorded in Section VI. All meetings were to be noted briefly. Any school board discussions or decisions about Project Discovery were to be described. Minutes of the meetings were to be appended to this section.

Community reaction to the project was the topic of Section VII. Here any anecdotes indicative of community reaction to the project were to be recorded. This included anecdotes heard at school-community social functions, PTA meetings, athletic events, or calls from parents. Any clippings from newspapers, magazines or other publications regarding Project Discovery were to be attached to this section.

Section VIII dealt with the interest or reaction to Project Discovery by non-certified personnel. This classification included office personnel, custodians, cafeteria personnel, school bus drivers — anyone who worked at the school but did not have certification in education.

The cost to the companies and to the schools was a major question to be answered. Section IX was set up to provide a cost analysis of the materials and equipment supplied to each site by the project sponsors. To be included here was a log of maintenance required on any of the materials or equipment. It turned out that this information was directly available from the companies. The principal investigator for the project accumulated these data in direct conferences with company officials. Thus, Section IX was never used by the project residents as intended.
Instead, a separate list of questions relating to cost factors was drawn up. The project resident collected answers to the questions from school records and from interviews. The questions concerned both the money and time invested by the schools to make Project Discovery operable. Considered were (1) extra paid or voluntary members of the staff (2) travel time and expense of school personnel related to Project Discovery (3) time and cost of any in-service training for the staff (4) space required to house the equipment and materials (5) any modification of the school plant required to house the project (6) additional equipment or materials required such as shelves for the films and filmstrips (7) any additional administrative time required to direct the project.

In Section X information on all school staff meetings was recorded. The type of meeting was indicated by total staff, curriculum committee or similar titles. If Project Discovery was discussed, a record of the discussion was jotted down. Minutes of the meeting would be appended to the form.

Information on media available to other schools in the district was listed in Section XI. The forms used were like those for Section V, which listed school-owned media for the schools participating in Project Discovery. Materials available to the schools, location within the school and quantity were listed on one form. The same information for equipment was listed on a second form.

Section XII provided forms to describe various constraints or limitations placed upon the use of the media available in the school.
Three identical forms were used. One listed constraints placed upon students. The second listed constraints placed upon teachers. The third listed constraints placed upon any other persons using the media. The forms had a place to list the constraint, the date it was initiated and the manner in which it was initiated. A heading marked "description of the constraint" was actually used to note the degree to which the constraint was accepted and followed.

The final section of the diary, Section XIII approached one typical form of a diary. Here the project resident had a place to record all miscellaneous, but pertinent information about the project which was not discussed in other sections of the diary. Here unanticipated incidents were recorded. Any comments or reactions of the resident were also to be recorded here. This section was to be completed daily. Thus, the resident recorded in this section the major activities of the day.

Demographic Data Information describing the communities, school systems, teachers and students were also necessary for reporting the context of the study. By pointing to similarities or dissimilarities with their own school districts, administrators interested in the project, would have a basis for deciding whether such a project would serve the needs of their students.

For demographic data on the communities, U.S. Census reports were studied. Information on the student population was gathered from school documents. Included here were the student I.Q. scores, achievement test results, absentee records and any hearing or vision defects.
The achievement scores were those from the standard tests given in each of the schools involved in the study. The data were gathered for the year of the study and for the year prior to the project.

Vision and hearing defects were recorded because it was expected that such factors would influence student use of the media. The data were recorded according to each school's definitions of what constituted a hearing or vision problem. The reason for this was that the investigators could not give these physical tests. They had to rely on information from the school nurse, carefully noting the school's definition of a hearing or vision defect. In analyzing the data a common definition for all schools could be agreed upon.

For data regarding the teachers, two sources of information were used. Information that could be collected from school records on personnel were copied from such records. For each teacher the following information was gathered: (1) age (2) teaching credential held, such as temporary, provisional or permanent (3) the grade levels at which the teacher is qualified to work (4) the subjects the teacher is qualified to teach (5) a list of the schools at which the teacher has worked and length of stay at each (6) academic degree held and (7) major and minor areas for the degree.

Other professional information about the teacher was gathered by asking the teachers to complete a questionnaire regarding (1) the educational organizations to which they belonged (2) professional meetings they attended (3) professional journals they read and (4) their past experiences with educational media.\(^7\)

\(^7\)See Appendix IV.
The teacher information collected from the questionnaires and the school records were then to be put together to present a picture of the teachers at each of the sites. Again, it was thought that this would provide useful information to a school system contemplating purchasing educational media. Pertinent teacher characteristics relating to media use would be noted as something for the administrators to think of in examining whether the teachers in their schools could manage such a project.\(^8\)

**Conclusion** With information collected from observations, interviews, media usage, records, systematic records of such items as school meetings and community reactions to the project, and demographic data on the schools themselves, a complete picture of the way in which the idea of a maximum availability of materials actually operated within the schools was to be provided. As a test of the utility of such field studies for gathering data regarding on-going situations, the validity and reliability of the instruments used in Project Discovery will be discussed in Chapter VI. Chapter V will discuss the role of the project resident on the basis of data gathered from Project Discovery.

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\(^8\)Forms regarding the opinions of the teachers and students about media were also given to teachers and students. They were given because of local studies each of the schools planned to conduct. Under the agreement between investigators and schools not to interfere with the school's operation of the project the Teacher Opinionnaire and Student Opinionnaire would not have been given because they might alert teachers and students to various thoughts about media. Since the opinionnaires were given because of local school plans, they are not considered in this paper as part of field study techniques for Project Discovery.
CHAPTER V

THE ROLE OF THE PROJECT RESIDENT

During the time the project residents lived at the school sites and gathered data on Project Discovery, they discovered a number of ways to increase the potential for data collection and to maintain the cooperation of the school. Certain personal characteristics became evident as important variables for the role of a project resident. These characteristics will be discussed in this chapter in terms of experiences with Project Discovery.

In order to accomplish the tasks of a project resident which have been outlined in previous chapters the necessary qualifications for a project resident were: impartiality, neutrality, unobtrusiveness, "non-expertness," ability to accept school rules, ability to tolerate isolation in work, and decisiveness.

Impartiality The first characteristic to be considered is impartiality. All the members of the school staff "should have approximately equal access" to the project resident's attention.¹ This is not an easy task. The school staff can make themselves easily accessible to the project resident or vice versa. Contacts with some

individuals will be more rewarding in terms of information gathered and in terms of social relationships. There is a tendency to contact such persons most frequently. Yet equal access is vital for certitude that all information sources have been tapped. Extra effort is required to make oneself available to those less ready to provide information.

This might mean that the project resident will need to devise ways to get around the building in order to meet teachers casually when they are not busy and have time to talk. For instance, one resident did not have trouble casually talking to teachers whose rooms were near the resident's office. The teachers would often stop in to chat. However, other teachers congregated in the "smoker." The resident did not smoke and could not frequent the room on pretense of smoking. To stop in without a reason would alert teachers to an artificial situation. They would not respond naturally. Luckily, the ventilation in the project resident's office was poor. This provided an honest reason for going to the smoker and being accessible to those teachers who frequented the room.

In relation to the concern of being available to teachers, yet being able to be alone in order to accomplish certain job tasks, the location of the project residents office is important. It should be placed where teachers feel free to stop in. It should not have an aura of secrecy for "research." Yet the project resident will need some privacy in order to complete reports, think about his work, and talk to people individually. This is mentioned because at one school site, the project resident had an office which was near the main office
of the school. Because he was close at hand he was asked to help continually if problems arose. The resident wanted to cooperate with the school and help. However, the job tasks increased to a point where he had a difficult time doing his own work.

The introduction to the school can help or hinder the project resident's achievement of impartiality. From the standpoint of applied anthropology, Benjamin Paul claims "entree" to a community is easier if the resident first establishes contacts with the controlling factions of a community.² Once the project resident has the confidence of the highly respected members of a group, he will meet few obstacles with the rest of the people. In contrast, Chris Argyris, also speaking from experience in applied anthropology advocates starting to work with staff or employees before administrative leaders.³ From the experiences of the film study, this writer advocates emphasis upon gaining rapport with the teaching staff. The project resident depends daily upon the teacher's cooperation in order to gather data. Besides, the administration will have already decided that the innovation and evaluation of its use by the school is important or the project residents would not be at the site. Once the teachers discovered that the project residents did not repeat information to the administration, they also became more open with the residents.


Impartiality involves equal access of the school personnel to the project residents, this normally occurred in individual, rather than group situations. Teachers are part of a group, but usually work alone in their room before and after school. So the project residents often found the teacher alone when starting informal interviews or conversations. The individual attention was seen as very important by two residents. Responding to methodology questions, the two residents commented that usually if more than one teacher was present, they were unable to get good data. This was not a concern for the other two residents. From the limited situations involved, the decision to concentrate on working with group situations or with individual teachers depends upon the particular situation. From the data there was not sufficient evidence to generalize.

While there is a need to be impartial, the project residents found that it was important to be concerned about the personal interests of the teachers. The residents had better rapport with the teachers if they did not mention the film study each time they talked to the teachers. As one project resident commented "if the teachers think 'project' every time they see you, they will tire of you rapidly." Thus, the residents made a point to talk to the teachers about their families, their vacations, the books they read, whatever was important to the teacher.

An additional concern which did not arise in the prototype study, but which might easily arise in future studies has been pointed out in anthropological and sociological literature. If the group or organization which is being studied has low staff satisfaction, or if
a lack of good relations between staff and administration exists, the task of the project resident may become extremely difficult. The project resident could easily become the scapegoat for anxieties due to poor working conditions.

**Neutrality** The second attribute required by project residents is neutrality. A non-judgmental reaction to staff members becomes important in attempting to see all sides of an issue and not to become involved with particular factions. This does not mean the project resident may not have opinions and express them as such in reports to the central project staff. But it means that to avoid antagonizing any of the school community, the resident does not become emotionally involved in controversial issues with school personnel . . . nor does he express opinions regarding the innovation. That would certainly constitute an attempt to influence the personnel and violate the decision not to manipulate the situation.

Throughout his stay in the school, the project resident will hear gossip about the school personnel. As he gains more rapport with teachers, the possibilities for hearing gossip increases. How can the project resident keep from being influenced by such gossip? In a mid-year report to each other, that the project residents of the film study did, one resident brought up this question and answered it this way:

When I hear the troubles and gossip, I have to remind myself that this is not objective information. I can't let knowing such gossip influence my work with the teachers. For example, I go out of my way
to be nice to --- in spite of the number of stories I hear about ---. When I hear "stories" from teachers, it helps me to think of the principles for accepting legal testimony. It provides some balance for judgment.

Interestingly, another project resident commented on rereading this paragraph when faced by a comparable situation. The residents reacted to the gossip as any human being does, except that they were more alert to the probabilities of hearing scuttlebutt. They were alerted to considering "stories" in terms of the source, and evidence for credibility.

**Unobtrusiveness** The third characteristic required by a project resident is that of being unobtrusive. The resident must structure his tasks around the convenience of the school. He is not to interfere with regular school processes or call attention to his own work. In practice, this means that in the beginning of the school year the project resident will likely feel frustrated. Teachers and administrators will be busy with the opening of school. Talking with an "outsider" will not be convenient. It is a time for the resident to wait to be accepted; to let the staff look him over. In several weeks the staff will become used to the resident. Also, the staff has a regular job to do; job expectations to meet. After a while initial concern over the project resident and what he might expect wanes. A number of sociological and anthropological studies stress this same point. As the anthropologist often used his time to learn the native

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language as he waits for the "natives" to look him over, so the
project resident can use the time to make maps of the arrangement of
classrooms and collect demographic information on the school.

The task of the project resident is to observe the total school
situation. Yet to be unobtrusive, not to impede the daily flow of
the school, he needs to vary somewhat from a plan of unrestricted
observation. It is extremely difficult for any group to accept full,
unrestricted observation of their behavior. As sociologist Robert
Merton has pointed out:

5. . . some measure of leeway in conforming to role-
expectations is presupposed in all groups. To have
to meet the strict requirements of a role at all times,
without some degree of deviation, is to experience
insufficient allowance for individual differences in
training and capacity and for situational exigencies
which make strict conformity extremely difficult.5

Although this particular reference to Merton was not used
during the design of the study, several guides which reflected
the same thinking were recommended. Project residents were warned
that during the last half hour of class time, students get restless
and teachers want to "clean up" projects for the day. It would not
be wise to use this as prime time for classroom observations. Yet,
an examination of the formal classroom observations of the four
residents show a number of observations falling into the last half
hour of the school day. The residents stated that the teachers
made themselves available to observations at such times.

Another consideration was not to observe teachers who became ill, but wanted to stay and finish the day's instruction. Or if a teacher was involved in an intense personal situation, such as an accident in the family, a sense of privacy for the teacher should dominate observation decisions. Some of these situations did not arise. They are mentioned here as an example of events that would legitimately interrupt the work of the resident. Even if a sense of privacy was not felt to be important for the staff, it would not be wise to observe at such times. The stress of the situation for the individual would result in an atypical situation, likely to draw attention to the presence of the observer.

A puzzling decision for each of the residents was how much to explain their work. It had been decided to tell the teachers at the first faculty meeting at each site that the project residents were interested in the use of films and filmstrips. For that reason the resident would be staying at the school, doing some observing, some interviewing and data gathering. This was an honest job description without being so specific as to (1) draw unnecessary attention to the work of the project resident and (2) give the teachers methodological information which would be inappropriate and uninteresting to teachers.

To tell enough, but not too much was the rationale. In fact, the project residents discovered that this was not sufficient. Often people do not listen carefully the first time something is said. The diary entries of the residents show that for the first several weeks the teachers frequently asked about the resident's jobs. From the recorded teacher comments, this was a way the teachers reassured
themselves that the project resident would not be a threat. After they learned to know the residents, the teachers seemed comfortable with them. At least, the questions about the job of the resident ended.

This was the general pattern. One teacher was not so easily satisfied. As the project resident at the site wrote:

She wanted to know immediately what I was going to be doing: observing or helping them? The either or question tipped me off to be careful in answering.

The same teacher also raised the issue of the project resident's role the following week. This example shows the amount of patience and tact needed by the resident to gain a certain amount of unobtrusiveness in order that he might begin his work.

One test of the unobtrusiveness of the four residents in the film study came from teacher comments to central staff members of the project who come to visit the sites. At two of the four sites, different central staff members were told by teachers that they were not sure what the project residents were doing, but that they were easy to get along with. They did not annoy anyone. This was unsolicited information, as if the teachers wanted to protect the project residents by giving a favorable report of them to their superiors.

Non-expertness. The fourth quality needed by the project resident is "non-expertness." In order not to threaten the school staff, the residents should not pose as experts in regard to the tasks performed
by the teachers and administrative staff. This is a recommendation from sociologists who have claimed:

One could argue that the most effective observer is the one whose words and actions are so unremarkable they go virtually unnoticed among his respondents, for the observer enters a situation to learn, not to impress or teach.⁶

It is important for the project residents to be competent in their work, but not to draw the attention of the school to this. This was accidentally discovered by the project residents in working with the schools. The issue of "non-expertness" had not been part of the planning sessions for the project. However, in operationalizing the idea of not manipulating the situation, it was decided not to volunteer much information about the professional background of the project residents. If the teacher knew that the project resident was completing a doctorate in science education, they would look to him to solve their science problems. Or if the teachers knew that the resident was completing a doctorate in communications, they would expect the resident to suggest ways to use the films and filmstrips. The residents attempted to let the school personnel get to know them as individuals, but de-emphasized their professional concerns.

By observing the reaction of teacher to visitors, the project residents began to realize ways they could become a threat to the teachers. In order not to give out information about the project, because this would influence future teacher actions (manipulation of the situation) the project residents tried not to talk to visitors about the project. They wanted to know where the visitors came from,

⁶Scott, p. 166.
how they had heard about the project, and their reactions to what they saw at the school. But the residents did not want the visitors to ask them questions about the project. In attempting to gain information without giving away data, the project residents noticed that teachers were not pleased when visitors wanted to talk to the project residents. The teachers were doing the actual work of implementing the innovation. They deserved the attention of visitors. The project residents would have been a threat to their chance to talk to outsiders. This was particularly noted if "important" visitors came to the schools, such as university professors or reporters from national magazines.

The project residents needed self-confidence in themselves and their work in order to tolerate the fact that they were professional educators, but were not to be thought of as experts. After six months of observing classroom teachers using films and filmstrips, the residents had probably seen more classroom use of films than many other educators. This was the largest study of classroom use of films to date. Yet, the residents had to be satisfied to have requests for information go to those who had observed few situations with less variation of subject matter and grade level.

At the end of the project the residents would provide data for the final report. But until then, they had to be willing to appear uninformed. For instance, the project residents kept records of all films and filmstrips that teachers or students checked out of the library. The data were sent to the central office staff monthly. When a reporter asked the librarian at one school how many times films and filmstrips had been used, the librarian called the project resident.
To provide the information prior to the end of the study would have been manipulating the outcome, altering the school to high or low usage. Thus, the project resident could not answer the request. As a defense against such questions, the project resident sent the data in monthly and did not keep these records at the school site. The resident honestly did not know the answer. But the librarian was not satisfied. The retort to the project resident's response was "Well, the reporter wants to write the story now. He doesn't care about getting the information in two months." The job of the project resident was to understand the viewpoint of the librarian and be willing to appear unorganized in her eyes.

Willingness to Accept School Rules The fifth consideration in selecting project residents is their willingness to accept school rules. The residents were not working for the schools, but for a university research project. They were responsible to the university. Strictly speaking, they did not have to abide by regular school procedures. They did not have regular work hours. Yet they arrived at school when the teachers did and usually remained longer than the teachers after school. The residents had been trained to be aware that they were guests in the school; outsiders who had been taken in. But they did not want to appear to be "prima donnas."

Thus, one resident wrote that he made a practice of telling the principal where he would be if he was not going to be at school. This helped develop a warm relationship. The principal did not wonder about secret visits of the project resident to the district educational administrative offices, because he knew the project resident was going
there. There was less chance for doubts to enter the principal's mind when someone reported seeing the project resident at the district office. This, in turn, prevented embarrassment for the principal in admitting no knowledge of the visit. The project resident reported in advance that he was going, but did not state why. In this sense he was not revealing information about the project. Yet the principal showed no evidence of wondering about this. In fact, while the principal said that it was not necessary for the resident to leave word at school as to where he would be, the principal seemed pleased that the project resident continued the practice.

**Job Isolation** By the nature of the job the resident could not speak to anyone at the site about his work. This related to the next quality needed by the project residents; an ability to tolerate isolation of work interests. The isolation did not consist of being removed from other people, but was a lack of opportunity to speak of his work, to share interesting findings. The residents were located in four different states. Their work involved so much writing that they did not correspond with each other regarding their work. Yet the central staff became so inundated with data that they could not provide feedback to the project residents. Perhaps that is why the project residents wrote such extensive job analyses in their diaries. Diary items such as the following would suggest this.

I am concerned about getting into classrooms more. Somedays I do great. More business than I can handle. But somedays I am not that busy and I feel guilty about it - at edge. I feel as if I am wasting time walking around the building, yet I know this is a way of getting to different sections of the school, bumping into different people. For instance, I know it is good to be in the general office around 8:45 a.m. Teachers ditto off
materials then and check their mail boxes. They will see me and talk if they are concerned about a film. I must make the effort to be where they are. It is no good to wait for them to come to me. That is out of their way. They have many things to think about - lessons, parents, etc. But if they see me, they will recall things, tell me incidents. . .

When members of the central project staff visited the project schools, the project residents frequently arranged for them to observe classes. In one case two teachers told the project resident they were happy to have the resident in their classroom, but did not want him to bring along a member of the central project staff.

What was most surprising about both of these incidents is that I felt completely free with both of the teachers to observe their classrooms without necessarily checking in advance. Now I discovered that while I was welcome, 'strangers' were not, even when they were with me.

I was considerably unnerved by both these teachers' reactions --- especially when I was congratulating myself on having earned their confidence. The more I thought about it, though, the more I realized that both of these teachers felt enough confidence in me to indicate that 'strangers' were not welcome. Of course, the presence of supervisors in the building on the same day did nothing to improve the desire to have visitors in the classrooms.

The interviews are still a source of uneasiness for me; the time problem seems to have solved itself because as I have become familiar with each teacher's idiom, I find I do not have to ask so many clarifying questions and thus the time consumed by these interviews is running from 30-45 minutes. Now the obvious danger here is that I will assume too much after a while and perhaps not ask clarifying questions when I should have, but I presume that an examination of the interview summaries by the (central) staff would probably uncover a trend in this direction - if I don't myself in just reading through them.

I am now wondering how much more feedback from the central staff would help me. A good psychological lift. It would give me ideas and insights - what to look for in terms of the other schools and what had been learned
there. Feedback would mean an extension of work. But for on the spot decisions, even the phone on the wall is not the answer. I am at the site. The central office is not. They know the outlines and aims of the project. But I know that too and on that basis decide what to do. The central office can't be expected to know the daily situation at one school. But it is a question related to all sites, then a single approach would help and guide lines from the central staff would help.

At the same time that the project residents were unable to share their job concerns with anyone, they became the recipients of the school staff's personal and professional concerns. By the middle of the project teachers realized that comments they made to the project residents were not repeated to other teachers or to the administration. When they found that even positive comments were not repeated, they began to include negative and confidential information. But the staff also began to see the residents as an outlet for their personal worries. In their diary comments the residents spoke of a desire to help the teachers, yet not have so much of their time absorbed by teachers' problems that they could not do their own work. This was information the residents could never report because it was given in confidence. But it could be considered implicitly in assessing the final report of the film study to see if the report reflected the tone of the sites as well as factual data.

Decisiveness The evaluation was designed so that the same major evaluative instruments could be used at each site. Yet each site involved intentional differences in terms of the stratified sampling. This meant there would be different situations arising that could not be planned for in advance. Thus, the sixth characteristic the project
residents needed was decisiveness to judge how to handle the unanticipated. The necessary decisiveness was developed during the training period for the work at the sites. The project residents were a part of all planning and helped to develop the evaluative instruments for the project. This provided understanding of the project focus and of the thinking of the principal investigators. Thus the residents were able to make decisions in terms of the thinking of the central staff.

One resident, for example, reported uncertainty at first about what to do when a teacher invited him to observe a lesson at the time a PTA council meeting was scheduled. The project residents were to go to all PTA meetings. Yet, the teacher mentioned the lesson to the resident because she wanted to "try something new. I don't know if it will work, but would you like to come?" Naturally the resident would not refuse such an invitation. The project resident in this situation knew enough of the school's operation to be able to compromise. PTA meetings generally started late. Moreover, the first half hour was given to minutes of the last meeting, treasurer's report and general introductory procedures. The resident calculated that the first half hour of the meeting could be missed without loss of information. Thus, the resident went to the classroom lesson and then joined the PTA meeting. He arrived during the reading of committee reports, but prior to discussion of them. This provided a basis to judge whether crucial information had been lost.

Besides knowledge of the thinking of the central staff as a basis for decisions, the project residents needed to have a sufficient
number of job tasks and operational procedures standardized in order to be free to think about and work with unanticipated situations. For instance, project residents sometimes heard information about the project from visitors that they had not heard from the teachers. This was a cue to analyze their methods to find out how they had missed the data, what kinds of information teachers were likely to tell visitors or see how the visitors had gathered misinformation. All events were "grist for the mill." The project residents had to determine the relative significance of grist and sort it for use in the mill of analysis.

**Conclusion** The personal qualities that became important for the role of a project resident, as that role emerged in the exemplar field study, have implications for future field studies. Personnel can be sought who have the characteristics discussed in this chapter. Or, a training program can be structured to (1) alert the project residents to their expected role and (2) provide the residents with some minimal experience in that regard. The variety of tasks a project resident is expected to complete plus the conditions under which he must complete them can provide exciting variation in work. Unless the project resident has the characteristics discussed in this chapter, however, the same tasks can become continuing frustrations.
CHAPTER VI

AN EXEMPLARY FIELD STUDY: EXAMINATION OF FIELD STUDY METHODS

Thus far the strategies for field studies and specific instruments have been examined in terms of validity and reliability. An exemplar field study and the role of a project resident have also been detailed. This chapter is concerned with examining the theoretical considerations for field studies by applying the criteria of validity and reliability to the exemplar field study outlined in Chapter IV. The specific instruments used, the sample and the over-all design will be discussed.

Sample In Chapter IV it was stated that the schools participating in Project Discovery were selected by Bell and Howell Company and Encyclopaedia Brittanica Films. Yet, this was not just any available sample. In examining the school sites, the investigators found a sample stratified for socio-economic differences which also reflected differences in the school systems and student characteristics. One school selected was in "one of the highest suburban communities on the socio-economic scale." The community had a fairly stable population, plus a long history of dedication to educational excellence.

The average pupil I.Q. in the school was 118. The pupil-teacher ratio was about 25-1. Teacher turnover from year to year was low. In contrast, one of the other schools was in a low income area of a large city where the housing situation was so bad that it was common to find entire families living in a single room. Family median income was approximately $3,000 per year. The school buildings in this area were old and deteriorated. Thirty-six percent of those in use were more than 50 years old. Student populations of the school changed rapidly due to the poor housing situation and the drop-out rate in the area was high. Average teacher-pupil ratio was 32-1.

Between these extremes were the characteristics of a school in a rural area and one in a rapidly growing suburb. The school sites were additionally stratified for geographic location in four different regions of the United States.

These differences constituted a purposeful sampling recommended for field studies in order to determine whether an innovation is appropriate for all schools, or to particular kinds of schools. In addition, with a sample of 127 teachers and about 4160 students, there was a sufficient number upon which to generalize the results as they apply to different school situations.

Observations The theoretical discussion of observation instruments in Chapter III emphasized four factors in ascertaining the validity of observational data: (1) operational categories (2) low level of inference (3) representativeness of observations and (4) assessment of the observer as a variable. The exemplary field study was concerned with the feasibility of meeting all of these criteria.
The observation instrument for the film study, as discussed in Chapter IV did request information which was directly observable and focused upon the relationship of Project Discovery to the classroom. The manner in which media were used - with or without narration, or entire versus segmental use of a film - were readily visible. The observers did not have to make inferences to encircle one of the possible alternatives. Moreover, a set of operational definitions for each term on the observation instrument was made available to the observers. If by chance, they had a question about the observation instrument, they could refer to the definitions. This along with the fact that the observation instrument was simple enough so that it could be completed immediately after an observation or during the lesson, meant that the observer did not have to make judgments during the observation. He could make decisions regarding the observation after the lesson with the aid of the definitions and sample lessons.

The panel technique of selecting one teacher at each grade level whose class would be observed at regular intervals was used to collect representative observations. This provided the frequency of observation for selected classes that is needed for generalization. It was also a precaution against having the resident observe primarily lessons which the teacher conducted "for visitors." Instead of such atypical situations, the observer wanted to know how the classroom lessons were regularly handled. To insure observing typical as well as atypical lessons, frequent observations were done over a long period of time (one school year).
While the residents emphasized observing "panel teachers," each resident was to observe another teacher at each grade level each month to provide comparative data. This was the minimum. If possible, the project residents were to observe every teacher once a month. The project residents were also to observe one lesson with and one without the use of the innovation for each teacher observed per month. And finally, the observations were to be done across subject areas.

This assignment was not easy to fulfill when the residents had to rely on what teachers did instead of what they would have liked the teachers to do. In practice the plan did not work out. The residents averaged 25 classroom observations each month amidst their other duties. Yet no one of the residents observed each panel member every month. In two cases, the residents had omitted just one panel teacher one month. In the other two cases a panel teacher was omitted in several of the monthly tabulations. Illness, shortened classes to prepare for Christmas programs and/or parent-teacher conferences were the reasons for these omissions. Yet, the project residents did gather more observations for each panel teacher than for non-panel teachers.

The second criterion in planning observations was to observe a media and non-media lesson each month for each panel member. This would provide data to compare classroom behavior with and without the use of the innovation. Again, no resident met the criterion. All residents consistently turned in more media lessons than non-media lessons. This was due to the operational rule that if they could only
obtain one observation to select the situation using media. For several reasons it became impossible to obtain both media and non-media lessons. The residents tried to obtain non-media lessons directly before or after the media lesson. At one site, the lesson before or after frequently was a "special" lesson, i.e., art, music or physical education which were taught by different instructors. In other cases the media lessons lasted 30 minutes or longer. After that length of time the teachers began to show awareness of the project resident. Thus, it was not wise to remain for the following lesson. Finally, the schedules of the project residents did not permit media and non-media observations in terms of the number of tasks they were to accomplish.

The recommendation that an equal number of lessons be observed in each subject area did not work out either. But it did not work out because it would not have produced representative data. The subject matter of the elementary schools centered around science, social studies, mathematics, and language arts. Music, art and physical education occurred only once a week. The content of the media was mainly in science and social studies. To have observed an equal number of lessons in each curriculum area would not have provided a valid description of the school curriculum, nor of the use of media within the curriculum. But to know that such a balanced observational plan would not be representative require the daily presence of a project resident at the site to provide assurance that the media were not used in the other areas.
The data showed that, excluding panel teachers, the residents observed some teachers more than others. The project residents noted that this occurred for several reasons; (1) some teachers used the media more than others and thus the residents tended to observe these teachers (2) some teachers had an open door policy so that the project resident could observe any time, while other teachers wanted advance notice that the project resident would be observing. Such factors became considerations, too, in collecting and assessing the validity of the data.

In order to assess the alteration in the classroom due to the presence of an outsider, the observer congruency scale described on pages 89-90 was used during Project Discovery. The six categories into which the observers were to place themselves were: (1) onlooker (2) invited member (3) member (4) active functionary (5) joint leader (6) single leader.

The category considered most fitting to merging with the situation, yet not manipulating it, was 3 (member). One (onlooker) and 6 (single leader) were least desirable since in both of these situations the class was consciously aware of the presence of the observer.

It was expected that at the beginning of the field study many of the observer congruency scale ratings by the residents would fall at one or two. However, after the teachers and students became used to the residents' presence in the classroom, it was expected that the ratings would tend to three and four. A tabulation of the frequency with which each rating occurred for the 659 observations done by the
residents showed that it is a reasonable expectation to merge with the situation, yet not manipulate it. Thirty-five percent of the ratings clustered at 2 (invited member) and 35.6 percent clustered at 3 (member).

To provide a basis of comparison concerning classroom behavior when the innovation was being used and when it was not, the project residents tried to observe a non-film lesson for every film lesson they observed in a particular classroom. In practice, this was not always possible. Of the 659 observations, 481 were film or filmstrip lessons. Still, it was thought useful to see if the observer congruency scale altered for media and non-media lessons. It did not. Again the ratings clustered at 2 (invited member) and 3 (member). For media lessons, 26.5 percent had an observer congruency rating of 2 and 28.8 percent had a rating of 3. For non-media lessons 31.4 percent of the observer congruency ratings fell at 2 (invited member) and 25.2 percent of the ratings were marked 3 (member). There was a difference here in that 37 percent of the non-media lessons did not include a rating. This was primarily due to the data from one resident who had not marked this section for most of his non-media observations. These congruency ratings held fairly constant throughout the length of the project for three of the project residents. The other residents' ratings clustered at 2-3 (invited member-member) for 5 months and then began to cluster at 3-4 (member-active functionary) for the remainder of the project.

It seems unusual that so few ratings of one (onlooker) were recorded at the beginning of the field study. A progression of ratings from 1 to 5 or 6 would be more likely. This raises the question of whether the residents believed that a rating of 3 (member)
was most desirable and thus tended to give themselves this rating. It is a question to be considered; however the writer would reject the likelihood of this for two reasons. The project residents were trained that the important thing was not to try to be infallible, but to record mistakes so that the accuracy of the data could be determined. Also voluntary self-analysis records provided by the project residents showed that, in fact, they did record their interference \(^3\) in the situation.

A space at the end of the observation instrument for notes also provided a way to determine the influence of the observer in the classroom. A frequency count of the types of information recorder here - when the observer was not expected to write anything specific - showed 238 comments to explain the reasons the observers had marked particular categories of the observation instrument. Interestingly, 91 of these were an explanation of the rating for the observer congruency scale. This provided more data to check the specific instances that fit the definitions for the scale. Included here was such information as whether the resident was invited to observe, whether there were other "visitors" in the classroom, teacher interest in gaining information from the resident regarding the observation, whether the resident detected changes in the teacher since the last observation and how often the resident had previously been in the classroom.

One unexpected source of information regarding the influence of the observer in the classroom was Section XIII of the diary kept by the project residents. Voluntarily, the residents recorded a number of methodological concerns in this open-ended section of the field study records. Thus, for instance, one project resident wrote:

\textit{Picked up indication today from --- that my classroom observation visits might be disrupting regular classroom...}\(^3\) See p. 129-130.
routine: one of the children asked her to check some seatwork done that morning, and the teacher told her they weren't going to check seatwork first thing this afternoon because I had come to see them working with the film. Teacher explained to me that checking the morning's seatwork was the thing she usually did first with the children, and when I told her to go ahead, not to vary the routine just because I was there, she said that she could check seatwork later.

The continuation of observations over time helps to make the observer aware of ways that teachers may alter lessons when they observe. It is the consistency of observations over time that help the observer to perceive the subtleties in the situation. The following example reported by a project resident illustrates this.

After my interview with --- at noon yesterday, I was still in the room as the children came in from lunch. I overheard one child say to her neighbor, "Goody! we're going to see a film!" I looked around the room for evidence and could find none: the drapes were not drawn, no film was in the projector, no film cans or filmstrip cartridges were in sight. The only conclusion I came to is this: that particular third grader associates my presence in her room with the showing of films and filmstrips.

In contrast is the report of another project resident who noted a different reaction by the class when the resident was observing a class and when other "visitors" were present.

I was surprised after class when the teacher commented that the children did not respond in class as they usually do. "They were shy because of the visitors," she said. "They talk when you are here. They know you."

If the project residents take the time to voluntarily record such anecdotal information, it seems reasonable to create a way of systematically recording all the ways in which the classroom behavior was influenced by the presence of the project resident. The anecdotal system was not
required in the exemplary field study because the project residents had so many other responsibilities. Yet, the residents took the time to record methodological items in their diaries. Thus, it would not seem unreasonable to expect observers to record types of influence systematically if operational categories were selected which could easily be recorded.

One other technique occurred sporadically throughout the project that could be used to assess the validity of field study observations. Using the hindsight gained from this experience, this technique could be systematically built into future field studies. One resident made a practice of trying to talk to the teachers later in the day after an observation, just to see if the teacher would refer to the observed lesson. The project resident did not ask questions about the observation. Yet he noticed that the teachers often did speak about the lesson he had observed. Particularly, they would mention their specific objective in the lesson. Here was a way to cross-reference observed behavior with intended behavior. However, no specific form had been devised for this and the resident sometimes listed the teachers comments on the note section of the observation form and sometimes in the diary section of project data. This made it impossible to accumulate all the data for analysis.

It does suggest the possibility of providing space on the observation schedule for intended purpose and observed purpose. This would require the project resident to ascertain the teacher's purpose for each observed lesson. That is not always easy to do. At the end of the field
study, the project residents were asked how often they were able to talk to teachers later in the day in order to check upon the intended purpose of the lesson. Two residents replied that they tried to do this, but were not consistent in their attempts. Often they had to do other tasks at that time. One project resident stated that he talked to the teachers about the purpose of the observed lessons "very infrequently" because the teachers left the building shortly after dismissal. The fourth resident commented that he did not make an effort to contact teachers later in the day regarding the purpose of the observed lessons, but that it was the practice of teachers to gather in the lounge after school. If the project resident was there, the teachers would comment on the intent of the film usage and how it fit into the total unit of study.

These data from the exemplary field study then, show that it was possible to (1) gather representative observational data (2) that operational categories for observations could readily be stated and followed and (3) that the interference of the observer upon the situation can be assessed in several ways.

The reliability of the observational data was another theoretical concern treated in Chapter III. A main concern was with the use of instruments which required a low level of inference on the part of the observer. Under this condition past studies have shown that a higher degree of agreement between observers can be achieved.

In the design of the observation instrument, as the previous section pointed out, care was taken to state the needed information in
behavioral terms so that little inference was required. A pilot test of the instrument was not done in the sense that all four observers used the instrument for the same observation and then agreement across their record was checked. However, there were several other ways that the reliability of the observations could be assessed. An analysis of the log sheets for the observations indicated that the four project residents had been consistent in using it for a brief summary of teacher and student action. Yet they were free to use the log in any way they liked. A closer look showed that the log items were usually recorded from the teacher's point of view. Was this the resident's style of writing? Was it because the field study design stressed teacher behavior? Was it because teachers dominated the classroom situation? In responding to a questionnaire asking how they recorded log items, each resident independently replied that in the majority of situations, the classes centered around "what the teacher said." This was one indication of similar perspectives for the residents.

It was also noticed that each log consisted of 4-5 time units. Why did all 4 residents break the action of the class into 4-5 units? Was it due to a desire not to write too much during observations? In reply to a question regarding the basis for determining time units during observations, the residents said that they tried to record the main ideas, those the central staff wanted. These fortuitously divided into 4-5 units per observation.
The section for "notes" on the observation schedule was also studied to see what the residents found important to list as a note. While the specific comments naturally varied according to the particular observation, the comments consistently fit 5 categories. The consistency can be attributed to the training of the project residents so that they perceived the same bits of information as useful. The categories and proportion of observation comments follow.

**TABLE 1**

**OBSERVATION NOTES BY PROJECT RESIDENTS**

<table>
<thead>
<tr>
<th>Categories of Observation Notes</th>
<th>Resident A</th>
<th>Resident B</th>
<th>Resident C</th>
<th>Resident D</th>
</tr>
</thead>
<tbody>
<tr>
<td>An explanation of items checked on the observation schedule</td>
<td>82</td>
<td>35</td>
<td>22</td>
<td>99</td>
</tr>
<tr>
<td>Tasks of the resident related to the observation</td>
<td>10</td>
<td>0</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Notes on classroom behavior</td>
<td>12</td>
<td>17</td>
<td>7</td>
<td>48</td>
</tr>
<tr>
<td>Room environment</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Inferences by residents regarding the lesson</td>
<td>28</td>
<td>7</td>
<td>5</td>
<td>63</td>
</tr>
</tbody>
</table>

The table reflects a wide variation in the number of notes recorded by each resident. Since there was no requirement to complete that section of the observation schedule this cannot detract from the data that were gathered. However, the fact that within the variety in number
of comments, the same categories kept appearing is evidence of the ability of a group of project residents to focus on the same types of information and to record such information voluntarily. It can be argued that the perspective of the residents was reliable across schools.

In assessing the accuracy of the data, the degree to which the resident merged into the woodwork of the classroom was considered by the observer congruency scale. This scale can also be used as a test of observer reliability to see whether the observers were consistent in their acceptance into classrooms. In this case the observer congruency ratings for each resident must be considered in terms of the proportion of observations with each rating. The percentage of observations for each project resident which was allocated to each of the 6 options of the observer congruency scale is listed below.

**TABLE 2**

PERCENTAGE OF OBSERVATIONS FOR EACH OPTION ON THE OBSERVER CONGRUENCY SCALE

<table>
<thead>
<tr>
<th>Observer Congruency Scale</th>
<th>Resident A</th>
<th>Resident B</th>
<th>Resident C</th>
<th>Resident D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onlooker</td>
<td>2.8</td>
<td>4.4</td>
<td>1.8</td>
<td>22.4</td>
</tr>
<tr>
<td>Invited Guest</td>
<td>12.9</td>
<td>61.3</td>
<td>30.9</td>
<td>36.9</td>
</tr>
<tr>
<td>Member</td>
<td>35.4</td>
<td>11.6</td>
<td>63.6</td>
<td>35.3</td>
</tr>
<tr>
<td>Active Functionary</td>
<td>1.0</td>
<td>18.2</td>
<td>2.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Joint Leader</td>
<td>1.1</td>
<td>0.4</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Single Leader</td>
<td>0.5</td>
<td>0.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>?</td>
<td>46.2</td>
<td>3.6</td>
<td>0.6</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>99.9</td>
<td>99.9</td>
<td>99.9</td>
<td>99.9</td>
</tr>
</tbody>
</table>
The table does show reliability across observers in their ability to achieve a similar role at the different sites. The highest proportion of observations list 2 or 3 for the observer congruency scale for all residents. However, within these two areas there was considerable variation. While resident D had about the same proportion of observation ratings in the 2 and 3 category, residents B and C differed markedly. Resident B had a high number in the second category (61.3%) with considerably less in the third category (11.6%). In contrast resident C had only 30.9% in category 2 and 63.6% in category 3. Resident A had 48.3% of his observations classified as 2 or 3. However, 46.2% of his observations were not classified at all which provided no basis for assessing the degree of observer acceptance. It can be argued that each resident faced a different school situation, different personalities. Some of the schools were more accustomed to visitors and observers than others. The residents at these sites had a less difficult time merging into the background than did the project residents at the schools less used to visitors. To advance from a score of 1 to 2 at one site may be more significant than to proceed from 2 to 3 at another. Yet while this is a concern, there is no way to quantify such differences for reliability analysis.

In the case where there was the smallest percentage of observations classified as 3 on the observation scale, the data showed that over the months the proportion of ratings at 3 and 4 increased. This trend for greater acceptance the longer the observer is at the site agrees with the general reports of the field worker in sociology and
anthropology. It speaks for the need to have an individual at each field study site daily so that over time, he gains acceptance by the school and becomes unobtrusive to the school staff. In turn, this stresses the importance of longitudinal studies.

**Interview Data Considerations** for assessing the validity of interview data included (1) representativeness of the information gathered and (2) the acceptability of the testimony according to the principles of evidence.

During Project Discovery the panel technique for interviewing was used to gather representative data. The same teacher at each grade level who was part of the observation panel, was interviewed regularly. The random selection was done as soon as the residents arrived at the sites and knew the names of the teachers at each grade level. Alternates were also randomly selected in case a teacher did not respond to the request of a monthly interview, or in case one of the panel members became ill. The residents did not tell the teachers who the other panel members were. In fact, they asked the individual teachers not to talk about the interviews with others. They honestly told the teachers that they wanted the teachers independent opinions, not those of a group of teachers. Nor did the principals know who the teachers were, or whether any teachers refused to cooperate. However, it was expected that before the end of the project the teachers would discover by themselves who the panel members were.

Surprisingly, the residents reported that the teachers gave no indication of having knowledge of who the other panel members were. Frequently, the teachers mentioned that they wished they knew more
about the way other teachers used films and hoped the project resident's report at the end of the project would provide the answer. Also, teachers stated openly at several faculty meetings that they did not know how the other teachers used the available films and filmstrips. They wanted more opportunities to discuss this with their colleagues.

It was important to know whether or not the project residents were able to elicit the opinions of individual teachers. Another consideration was to note whether the opinions were gathered at regular intervals or whether the opinions represented only one point of the development of the project. The panel technique of interviewing teachers at monthly intervals regarding the same matters permitted continual time analysis. However, a procedural concern in relation to the time sampling did develop during the field study.

Initially it had been decided to interview each panel member during the second week of each month as a way of maintaining comparable time sampling across teachers. This was not held to rigidly by the directives of the central office staff nor the project residents. Each interview required 30-60 minutes plus an additional one to two hours to make arrangements with the teacher for the interview and to record the information gathered during the interview. With an average of 7 teacher interviews, the residents required about 14-21 hours per month for the interviews. There was a sufficient number of other tasks required by the project residents that often they were unable to spend 14-21 hours with the second week of the month on interviews.
In accepting the testimony of teachers it was recommended that the principles of evidence be followed. The project residents had no problem getting first hand information from the teachers. They were also able to gather explicit statements. By probing ambiguous statements such as "films are wonderful," the project residents received interview responses such as "Textbooks don't have enough pictures of people of different countries. The films provide me with the pictures." The more specific or operational the responses are, the more acceptable they are for field studies, because it is possible to generalize the results on the basis of exact information.

The teachers spoke about what happened in their own classrooms. If they provided anecdotal information about situations they had not observed, the project residents noted this. Such information could then be classified as hearsay evidence. It was to be noted as a story repeated in the school. Yet to accept the story itself the project resident would have to question the teacher who had observed the situation.

The project residents were also alerted to circumstantial evidence. For example at one field study site the fifth grade teachers spoke of the extensive use of filmstrips by "poor readers" in the fifth grade and the sudden improvement on a standard reading test given one month later. Whether this testimony was permissible for the final report depended upon the existence of a way to examine the entire series of events surrounding the improved reading score. Did the students receive additional help from tutors? Did the tutors rely upon the use of visual materials? Did the time spent by the
students studying reading change? How did the content of the specific filmstrips relate to the reading lessons? These and a number of related incidents would have to be examined before such testimony could be used as a valid conclusion. Because the project resident is continually at the site, he can check by observation or through past records for additional evidence of the information provided by the teachers. Another example will help clarify how this was done during the film study. Teachers at several sites commented regularly that the use of films in class increased the vocabulary of the students. One way to check this was to look at vocabulary test scores of students on sub-tests of standard achievement test on file at the schools. Another way was to devise specific vocabulary tests and administer them to the students. However, even if the vocabulary had increased according to these measures, there would be no certainty that it was due to the use of the films. Did the same vocabulary exist in textbooks? Did teachers stress vocabulary while introducing or reviewing films in class? There is a series of questions that must be raised in order to attribute a definite relationship between vocabulary increase and film usage.

The point is that the project resident at the site has a better vantage point from which to view the alternatives than the laboratory experimenter who is not exposed to as many options. To answer the question of whether vocabulary had been stressed by teachers during film lessons, for instance, it was possible to examine the 659 classroom observations to see whether the teachers had specifically taught vocabulary during the lessons. The fact that the data indicated that
teachers taught vocabulary in only 15 percent of the observations gave
greater credibility to the testimony of the teachers that vocabulary
increased from use of films.

Such opportunities to seek direct evidence and to cross-examine
the situation contributed to the validity of the field study inter­
views. There was also concern to provide situations for interviewing
where the teacher would be at ease. Rapport with the teacher was impor­
tant for collecting accurate data. This led to a number of procedural
decisions.

When the interviews were scheduled, they were done at the con­
venience of the teachers. This could be a lunch hour, the period
before or after school or during a teachers "free period." When the
project residents were asked whether there was any particularly good
time to interview the teachers, their response was that there was no
single preferred time. The teachers were willing to talk to the
residents almost any time. However, two of the residents did comment
that the time before class in the morning was a bad time. Teachers
were busy helping students and getting ready to start their teaching.

Perhaps one of the reasons the residents did not comment on other
bad times to interview was the fact that they purposely sought inter­
view times that would be convenient to the teachers. For instance, one
project resident noted the failure to interview a teacher one week
because the teacher had been out on sick leave for several days. The
resident did not want to request an interview on the first days that
the teacher was back because the teacher was quite busy catching up
with her work. Similarly, in commenting on the failure to get some information from one of the administrators according to the time schedule, one project resident wrote:

Obviously, I have not pressed for interview time this week; he's been far too busy with the proposal and the robbery investigation to have about an hour for the scheduled interviews. I'll try to get it in either Monday or Tuesday, but if not, I'll have to be late on this one.

The project resident took notes during the interviews with the panel teachers. A tape recorder was not used. The cost of purchasing recorders plus the secretarial cost of transcribing the interviews prohibited this. But more importantly, the project staff did not want tape recorders. The schools involved in the project were receiving national attention. They would be easy to identify in the final report of the project. If the teachers knew their exact words were recorded, this could be a threat to them. They might hesitate to provide information because they could not later deny giving the information. Using notetaking instead of using a tape recorder provided the teacher with an "out." He could say that the resident had misinterpreted his words. It was most unlikely that the teachers would want to deny their reports, but the precaution insured easy rapport with the teachers and provided for open responses during interviews.

There was also a concern that the project residents maintain a professional approach toward the interviews as the project developed and they came to know the teachers better. At the end of the study all four residents stated that this was not a difficult problem. But the
project residents did point out that the teachers did begin to tell them personal confidences at their interviews which did not relate to the project. The project resident naturally did not report such confidences, but did have to allow more time for the interviews in order to get the information he wanted and to let teachers talk about other matters important to them. Another resident reported concern in the middle of the project about the fact that one of the teachers started to joke during interviews. When the project resident had heard the teacher explain a "novel" film use, he asked whether the teacher had told anyone else about this idea, the teacher laughed, "No, you're getting an exclusive." But then the resident realized that he had built up enough rapport with the teacher so that they had an informal working relationship which provided honest, open answers. For the teacher became serious and went on to talk about how funny it was that teachers did not talk to each other about specific uses of instructional materials. "We speak of a good film and its merits . . . but not how we used the materials."

The panel interviews were used to ensure comparable data and to satisfy the requirement of detecting change over time. However, the investigatory staff realized that the information gathered was directly requested by the project residents. Voluntary information would more likely reflect matters of immediate concern to the teachers. It was important to collect such voluntary information also as a way (1) to provide sufficient contextual information and (2) to check upon the accuracy of interview data.
To see whether in practice, as well as in theory, it was possible to obtain a representative number of informal interviews with teachers, the writer tabulated the number of informal interviews each project resident had recorded at each of the four sites. There may have been more interviews than those recorded, but unless recorded they are useless in determining conclusions. These conversations varied in length both among themselves and from the formal interviews. There was also a wide variation in the number of informal interviews recorded by each resident. The total range for each of the residents was: 135, 34, 247, and 36. An examination of the number of informal interviews per teachers reflected a greater percentage of interviews with the teachers who were not part of the panel interviews. It could be argued that the project residents sought the non-panel members to check whether the data from panel members was representative of the entire school. However, this is difficult to prove.

The wide variation in the number of informal interviews per teacher could indicate that it was not easy in practice to get voluntary information from teachers regarding the project. This writer would reject that conclusion, however, for several reasons. First, there were no explicit orders to the residents regarding the relative importance of gathering and recording informal interviews. The residents did this as they could and as they remembered to do it. Second, one of the residents stated in his diary that he gathered many informal interviews, but did not record the information the same day. As a result the specifics which made the data useful were lost, so then he did not record the informal conversations at all.
These considerations, plus the fact that two of the project residents were able to gather a substantial number of informal interviews lead to the conclusion that it is within the realm of expectations to train project residents to be alert to possible informal interviews and to see the importance of daily recording such data. Furthermore, by keeping a chart of the number of interviews per teacher the project resident would know which teachers he should seek out to talk to generally, in hope that they would volunteer information about the project.

Besides checking informal interviews to see how the information compared with elicited information, the project residents noted the comments of teachers about the project to visitors. If the information differed from that which the project resident had been collecting, this became an indication to recheck sources of data and rapport with the teachers. This procedure for assessing data had not been anticipated, but the project residents noted the opportunity it offered when they heard teachers speaking to others about the project. Thus, as noted in Chapter III, one project resident wrote:

This information is, of course, second-hand from the --- visitors, but it does point out one thing to me: I am not tapping well enough the non-panel members to get their reactions and thinking about the use of the media.

The validity of testimony concerns (1) gathering detailed specific information during interviews (2) checking the data from interviews with the surrounding circumstances at the school and (3) determining whether teachers tell project residents the same information they relate to visitors. These are also the basic concerns for ascertaining the reliability of the data. The recording of specific, detailed
responses can be replicated. Little inference is involved here. When opinions of the project resident were included, they were stated as opinions. The reliability of the data were also checked by whether or not other persons collect similar responses. Finally, a pilot test of the interview instruments is recommended to see whether there is agreement over the responses elicited by the project residents. The time allotted for the preparation of the exemplary field study did not permit for such pilot testing, however.

Other Data Collections. The records of media use, school meetings and reference to Project Discovery and community reactions to the project simply required recording the occurrence of events that the project design specified as important to the field study. It was a way of describing the context and providing for accumulative evidence. However, an examination of some of the unanticipated events at the sites, provides a strong argument for the need for constant observation and data collection by a project resident.

A highlight of student interest at one of the schools occurred when a student wrote to President Johnson to tell the President about the school's film project. The observer heard of this when Jimmy read the letter he received from the President over the school public address system. Because the observer was continually at the school, he could make probable guesses about what had prompted the student to write and then he could check out his hunches. Was the student so excited that he wrote to the President? Was it part of a history lesson to write to a government official?
Actually, the student wrote the letter while ill at home. There was no assignment. But the observer did report that the student's teacher had previously required the children to write a letter to the producer of a film they viewed in class. In addition, this particular teacher had made a practice of writing to company officials, film producers and school administrators about her use of films. Here was reason to speculate about the teacher's influence versus unprompted enthusiasm for the films. The only way to know that the teacher herself had been writing letters to officials was for the observer to have sufficient rapport with the teacher to gather the information informally. It required a constant presence at the site so that the school staff accepted the observer as "belonging."

Another example of the unanticipated happening further reinforces the need to check the context of events. A planned serendipity concerned the use of films for visual information by students with aural or visual handicaps. Students with visual defects might get help from the magnification of detail produced by the films. It turned out that one school had a legally blind student who was a frequent user of films. The observer was curious about the student's exact use of the materials. The student always moved her chair to the front of the classroom if a film was shown. When viewing a film alone, the girl would often stop the projector and examine parts of the still picture on the screen.

Yet, when the observer talked to the girl about her use of films, the student did not indicate that she studied the visuals. She commented that she liked to "play" the films that she had viewed
in class because the narration was rapid. She could not "get all the ideas" the first time that she heard the narrator. So she re-played the films. Yet, she commented on how good the films were. The ideas were "so clear." The narrator was "organized." Here, then, was a case where observations differed from user perceptions.

The capability of the project resident to continually verify and check data both by observation and interview provided the focus and frequency necessary to provide accumulative evidence, a key strategy for field studies.

Verifying data on cross-referencing items had not been considered in detail prior to the field study. Yet several project residents discovered that this was a useful way to study the data. It has already been pointed out that the residents discovered the utility of talking to teachers about observed lessons. Here they found a way to look at perceived purposes and intended purposes. The project residents also noted that frequently during panel interviews, a teacher voluntarily discussed, in detail, lessons that the project resident had observed. The project resident in recording the interview could indicate that he had observed the lesson. Then he could study the observation schedule for that lesson and compare the observation with the interview. Beyond this the central office staff could analyze the data as an objective third party. In this way the richness of the personal data of the project resident, plus the objectivity of the outsider would be preserved.

The different approaches to the same situation was noted, but limitations for data analysis prevented the assessment of data received
under varying circumstances. The same limitation existed for (1) com­
paring teacher comments from formal interviews with the voluntary
comments of teachers (2) comparing formal observations with descrip­
tions of class activity in situations where the project resident
casually observed a class for about 10 minute periods. The possi­
ibilities for such cross-referencing of data were noticed as the exem­
plar field study progressed. In the midst of the study it was not
feasible to employ extra personnel to analyze such data. While this
cross-referencing was not possible to a large degree in the exemplar
field study, it stands as a recommendation for future field studies.

The linkage of data was possible in the manner planned before
the field study began. Data from observations, interviews, media use
and systematic records of school meetings, publicity for the project,
and the like were analyzed in perspective. In this way the contextual
nature of the field study was an asset. For instance, in the exemplary
study, the observation data indicated that the average length of lessons
involving films or filmstrips was 34 minutes. When this information
was considered with the total records of classroom film and filmstrip
usage, it was shown that about 5 percent of classtime was spent in
film or filmstrip lessons.

The varying interest in Project Discovery by the community at
one site was pointed out by examining the records of different school
related meetings. The project was not even mentioned at any of the
monthly board of education meetings, while it was discussed at 6 of the
7 PTA board meetings of the school. Again, such data could only be
collected by the continual observance of the school situation.
The continuity, the accumulative evidence from systematic record
collections, observations and interviews, and the data which occur
sporadically in unanticipated situations, casual conversations and
informal interviews provided the validity for this field study.

**Project Resident as an Instrument**  To provide the necessary
accumulative evidence gathered over time, a project resident was used
at each school site. The data he gathered by observation, interview
and record collection have been examined for its ability to meet
standard investigatory criteria. It is further necessary to examine
how the over-all influence of the project resident was assessed.

During the design of the field study general recommendations
were given to the project residents. They were told to do their work
at the convenience of the school, instead of at their own convenience.
They were alerted to ways which would prevent good data collection.
For example, they were never to volunteer information about Project
Discovery to teachers, or suggest how the teachers should use the
materials. Yet techniques to assess the overall influence of the
project residents upon the environment were not worked out. In fact,
little time was given to this issue. In view of this, the data from
the exemplary study have turned up some interesting facts. Although
the residents were not told to continually analyze themselves as instru-
ments, they were asked to keep a "diary section" in the data files.
The function of the diary was to record events or comments regarding
the film study that did not fit the structure of the other data
collection forms. This might be an informal teacher interview, a
comment on the physical school environment, a summary of the days' work, ideas to follow up or interpretations of the project resident regarding the situation.

An analysis of these data showed a surprising number of methodological concerns regarding the failure of the project resident to get information, interference by the resident or acceptance of the resident by the school. A total of 178 self-analysis comments were found in this section. The distribution for the four project residents was 18, 18, 63, and 79. In addition, the personal diary of one project resident turned up 85 such descriptions. The unequal number per project resident is due to (1) different events at each site (2) no definite assignments to provide such data, and (3) differing personalities among the residents.

One of the first questions that comes to mind in studying the methodological reports is whether the majority of the self-analysis descriptions occurred at the beginning of the project when the residents had just completed training. Or did the comments occur towards the end of the project when the residents might be restructuring the year's work. A month by month analysis for each resident showed a fairly even distribution of such comments. The "short months," i.e., those interrupted by Christmas and Easter vacations at the schools had fewer comments. But this was to be expected.

Unfortunately, the central project staff for the field study did not have the time to compare this information with the information gathered with structured instruments. It remains buried data. But
<table>
<thead>
<tr>
<th>Topic</th>
<th>Observer A</th>
<th>Observer B</th>
<th>Observer C</th>
<th>Observer D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total days recorded</td>
<td>60</td>
<td>78</td>
<td>54</td>
<td>137</td>
</tr>
<tr>
<td>Informal interviews</td>
<td>48</td>
<td>137</td>
<td>32</td>
<td>272</td>
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<tr>
<td>Methodology</td>
<td>18</td>
<td>79</td>
<td>18</td>
<td>63</td>
</tr>
<tr>
<td>Daily work, job tasks</td>
<td>39</td>
<td>15</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Procedural questions to central staff</td>
<td>21</td>
<td>29</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Staff conversations</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Visitor situation at the site</td>
<td>10</td>
<td>26</td>
<td>2</td>
<td>17</td>
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<tr>
<td>Informal observations</td>
<td>1</td>
<td>30</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Comments cross-referencing data to other records</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>Information that should have been recorded on other forms</td>
<td>11</td>
<td>12</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Demographic data about the school</td>
<td>11</td>
<td>12</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Project environment</td>
<td>9</td>
<td>23</td>
<td>12</td>
<td>47</td>
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<tr>
<td>Topic</td>
<td>Observer A</td>
<td>Observer B</td>
<td>Observer C</td>
<td>Observer D</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>Comments on student use of project materials</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>Details of observer orientation to the school</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Comments on films</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>School installation and use of equipment</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<td>Resident generalizations of data collected</td>
<td>11</td>
<td>6</td>
<td>1</td>
<td>3</td>
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<td>Records of speeches by school staff regarding project</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>0</td>
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<tr>
<td>Serendipities to follow up</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>3</td>
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<td>Resident explanations for loss of data</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Actions of teachers regarding the project</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Because the diary section was open-ended for project residents to record whatever they wanted to, the fact that items are not recorded does not mean that they were not of concern to project residents. However, there is no record of these concerns. Also the variation among schools is reflected in the types and frequency of information recorded. The list, however, does provide an indication of information of sufficient importance to all project residents that they recorded it in spite of the fact that this was not required.
it does indicate that such data can be gathered as a means to assess the validity of using project residents. Not only can it be collected, but if one can generalize from the exemplary study, the project residents will likely keep such records whether asked to or not - even with all of their other duties. Thus, it would be advisable to provide a form for accumulating such evidence so that it is easily accessible for analysis. The frequency and distribution of such data would provide checks on the accuracy of the results.

To show the extent of the methodological concerns and the richness of the data a number of pertinent statements by the residents in the diary section follow.

One project resident wrote that he helped a teacher wrap the film around the roller manually - interfering again, I suppose. She commented that it was still difficult to see the film in her room, and speculated about where she might show it elsewhere in the building; when she mentioned the lunchroom, I agreed, saying that the walls were light enough that she wouldn't need a screen; no sooner had I said that when I realized she hadn't thought of that, for she said so and decided to try the lunchroom out the next time she thought of using a film - interference on my part again!

Another wrote:

Got to learn to keep my ears open and my mouth shut; today I found myself more in the role of "explaining myself" instead of really listening to --- as he talked with me.

Another resident commented on the difficulty of recording events several days after they occurred, instead of on the same day.

Over the weekend I entered in the diary some events from last week. Reconstruction of events makes recall most difficult.
Commenting on job tasks, one project resident wrote:

Funny how I seem to work with one or two teachers for several days and then move to others. I've noticed this in typing 'informal interviews.' For several days it will be the same people and then change. The teachers got interested in telling me follow-up stories to a situation. It just seems to work that way.

Expressing concern about "fitting into the situation," another resident wrote:

There was a meeting for teachers this afternoon called by the committee. The meeting concerns a question raised at a faculty meeting on the reason the committee has issued no reports on how they spend their funds. The meeting today is to settle the matter. --- saw me in the hall and told me that the meeting was for teachers only. No other staff members. The teachers wanted it that way. And she wanted me to know this so that I would not be embarrassed by coming to the meeting and discovering that I was not to be there. She was nervous about telling me this. I had to spend ten minutes assuring her that I thought the meeting should be for teachers only. Well, I had contributed to the committee's fund, she said. I told her I did not care about that. I am concerned by this teacher's felt need to tell me about the meeting. I never go to this committee's meetings, nor to the ---. They are only for teachers. This teacher is edgy about the committee. There have been hot feelings in the school about the lack of a report on how funds are used.

These examples are a sign of the resident's awareness of his role as an instrument. In terms of that, he could respond to the way in which he was consciously interfering with the study and became more certain of his own role.

There are certain advantages of continual observation at a site by a project resident. Only by constant observation can the resident know the school in detail and be sensitive to school reaction to the presence of an observer. But there are limitations also to having an
observer in residence. The observer can get too close to the situation to describe it accurately. Or the observer may become too accustomed to the situation and lose a previous perceptiveness.

The problem of being continually at the school, for constancy of data, yet being apart from the situation for objectivity was handled in a minimum way by the exemplar study. In addition to the observer at each site, three consultants visited each site to gather data regarding the total concerns of the field study. Thus each site, received three such visits during the year. In addition the central investigatory staff received regular reports from the observers at the sites. By questioning the observers, alerting them to omissions or questionable data, a balanced perspective was possible.

Another illustration of checks on data reported was a "peculiar situation" noted by the central staff. One observer turned in an observation for a teacher's film lesson on January 7 from one to two p.m. The same observer also submitted an observation of a film lesson for the same teacher on that same day from two to three p.m. The staff questioned the observer regarding the accurate recording of dates. But while the staff did not believe that the teacher would have two consecutive film lessons, the teacher did. In fact, this alerted the observer to casually check the teacher's lesson plans to see how frequently this occurred. This answered the questions of whether the observer had seen a typical or atypical procedure.

Yet, the checks and balances upon the data in the project were in no way sufficient. The central staff was not able to keep abreast
of the data continually being sent in by the project residents. The possibility existed, but it was not carried out in practice.

**Conclusion** An analysis of the strategies for field studies as they have been applied, points out two things (1) a practical application of the theory upon which field study methods are based generally met the criteria of validity and reliability (2) limitations of time and personnel prevented an adequate examination of the data which were gathered, thus restricting the utility of field study data which depends upon the linkage of data and continual time analysis.

One weakness of the observation and interview instruments was that they were not tested for reliability prior to their use at the sites. The agreement across project residents in the use of the instruments in the same situation, thus could not be analyzed. The project residents did become concerned about their objectivity in reporting data. A second limitation was that the central staff was too small to analyze the data within the time allotted for this by the investigatory plan. Thus data which are collected are not cross-referenced and put into context to the extent that they might have been.

The strengths of the observations, interviews and other records are in the specific operational terms in which they were recorded, the representativeness of the panel technique, constancy of observation and data collection and the attempts to assess the influence of the project resident. These factors provided dense, focused data collected at specific time intervals which in turn led to accumulative evidence.
CHAPTER VII

SUMMARY

Molar investigations which stress the importance of the context of a study and which strive to minimize any manipulation of investigatory variables have not been considered important within the past stream of educational investigations. Traditionally educational research has dealt with laboratory experiments in which the investigator attempted to isolate and control variables. However, with the present support of the U. S. Office of Education for innovative projects, there is a growing concern for the investigation and evaluation of on-going situations.

The writer has attempted to point out the differences between laboratory experiments and field studies of on-going situations. Experimental investigations, using the methods of the laboratory worker, have been the traditional approach of educational research. As a result of such research, hypothetical conclusions can be reached. For instance, as a result of work in child psychology one can state: "If a child is frustrated, then he will exhibit aggressive and regressive behavior."\(^1\) Such a statement provides information about possibilities. But it does not state whether such possibilities are probable in various situations.

As a means of describing the manner in which the conclusions of laboratory experiments, or conclusions based upon different theories of education, work in the classroom, field studies are suggested as an appropriate form of investigation. Field studies, by means of their molar, contextual and non-manipulative approach, can describe how innovations do, in fact, work in the classroom. Moreover, field studies provide information regarding modification of an innovation so that it does fit the school situation. It is within this framework that this paper has analyzed field studies (1) theoretically in terms of investigatory criteria and (2) practically, in terms of an exemplary field study. As a result of this analysis certain strengths and weaknesses of field studies are evident. From this analysis recommendations for future field studies can also be drawn.

**Strengths and Weaknesses of Field Studies as Shown in the Exemplar Study**

In discussing the validity of field study data it was pointed out that one of the strengths of field studies is the fact that data regarding the innovation are gathered from several viewpoints - observed behavior (observations), intended behavior, attitudes and opinions (interviews), records of school and community meetings, demographic data, records of use of the innovation and unanticipated events relating to the innovation (record collections). While this information is collected in various ways the focus remains the same for all instruments. The investigatory instruments all emphasize the extent and nature of the adaptation of the innovation by the school. The focus and the potential for linking data gathered from various viewpoints in turn, provide accumulative evidence.
Besides focusing upon a central concern from various perspectives, the data need to be gathered over a long period of time in order that change or lack of change over time may be noted as the school adopts, modifies or rejects the innovation. At the same time that longitude is necessary, constancy of data collection is important as a means of providing a density of information which permits strong conclusions.

The exemplary field study provided information regarding the feasibility of collecting data which meets these requirements. The use of a project resident at each field study site, plus interviews and observations conducted at regular intervals provided a constancy of data collection. That constancy permitted project residents to take advantage of unanticipated situations also. It was because the resident (1) was present (2) regularly observed teachers and students and (3) regularly talked to students and teachers, that he could provide evidence regarding expected and unexpected developments within the project.

The central focus upon the innovation was also maintained in the exemplary study. The five week training period for the project residents provided intensive study about the specific methods for the Project Discovery investigation. The operational categories in the classroom observation instrument, the specific interview questions and the categories for records on various meetings further contributed to a central focus.
The potential for a longitudinal study and the linkage of the data were presented in the field study plans for the exemplary study. However, these two facets of the plan were not carried out extensively. According to the plans, the companies providing the materials and equipment to the Project Discovery schools would leave the equipment and materials in the schools for a minimum of three years. This was considered a sufficient time to gather data regarding the trial, adoption or rejection of an innovation. The investigatory team had received funds for a one-year study of the project with indications of an extension of funds for the second and third year. The plans for the extension of funds did not work out. Thus, while the project continued, the field study investigation did not.

Extensive data were gathered on the field study but it was not adequately linked for accumulative evidence. To be sure findings were linked notably, and information from the media use cards and observations were integrated to provide a measure of the amount of school time devoted to the media. However, there are few other examples to point to.

The diaries of the project residents included a number of informal interviews and observations which could be compared and contrasted with the formal interviews and observations. The project residents even reported cases where the teachers referred during interviews to lessons that the residents had observed.

However, the data were never analyzed to provide linkage across behaviors, perceptions and events. This was due to a shortage of personnel and to a need to alter plans for analysis when the field
study contract was not extended. Furthermore, a number of relevant ways to classify the data for cross-referencing first became apparent as the investigation developed. Since this was a prototype study it is not expected that extensive plans for cross-referencing could have been worked out in advance. Yet future field studies can benefit from the revealed fact that plans for data linkage must be anticipated.

These deficiencies of the exemplar study point out the need for longitudinal field studies not only so that there is sufficient time for the novelty of the project to wear off, but also so that there is sufficient time to study the data and produce insightful analyses.

Besides concern for the strength and weakness of field study design, there is concern for the strengths of the instruments used to implement the design. Since field studies rely heavily upon human observers the validity of observer judgment and the way in which the observers alter a "natural setting" is a primary concern. The judgmental issue was handled in the exemplary study (1) by an intensive training period for the project residents (2) by care to use instruments with operational categories so that a low level of inference was required and (3) by care in selecting the project residents.

The involvement or "interference" of the project resident with the school and the project was considered more carefully in the field study than in the major observational studies reported in the literature on observation instruments for education.² Realizing that total

²See Chapter III.
absence of involvement with the situation was impossible, the field study investigators tried to classify and assess the extent of interference so that it could be reported with the findings. This was done systematically for observations by using an observer congruency scale. It was done for interview data and records of meetings by requesting the residents to indicate whether the report gave an opinion of the project resident rather than data received directly from the school personnel.

The potential strength of assessing involvement was further shown in the voluntary self-analysis that the four project residents did independently at various times during the study. These were recorded in section XIII of the diary format used for data collection. This, too, can be capitalized upon in future studies.

A final consideration in looking at the strengths and weaknesses of the field study is the degree of agreement across the reports of the residents during their work in the schools. A major weakness of the exemplary study was the lack of pilot tests with the field study instruments used by the project residents. As a result there was no way to be certain that the project residents recorded or interpreted situations in the same way. The emphasis upon operational categories did minimize the level of inference required, thus making agreement across observers more likely. There is also some evidence from the types of information the project residents recorded in their daily reports of school events and their time logs of classroom observations that they did select the same type of information as important to record. Yet the lack of evidence of reliability of data gathered by the different observers from pilot tests is a definite weakness of the exemplar project.
Because the residents were at the field study site for an extensive period of time, there is an additional question of whether the project residents became inattentive to detail, whether they overlooked the obvious because they became too close to the situation. The exemplary study responded to this concern by providing each resident with three visits from members of the central investigatory staff to alert the residents to any observer fatigue. Also the visitors from the investigatory staff provided a check upon the perceptions of the residents. This was a start toward assessing observer fatigue. However, the project residents did not believe that these checks were sufficient.

**Recommendations for Future Educational Field Studies** The strengths and weaknesses of the exemplary study provide suggestions for improving the techniques used in future field studies.

The basic strategy of relying upon a project resident to observe, interview, and collect other relevant data is recommended for future studies. It is possible for such persons to collect the data. Instruments for such work can be devised with behavioral categories that make the instruments easy to use.

To prevent problems with the linkage of data for accumulative evidence a chart is suggested for collecting and analyzing field study data. The two dimensions to be charted are tasks and strategies. "Tasks" has two major sub-divisions: systematic data collection and sporadic data collection. Systematic data collection includes formal interviews, formal observations, data gathered at regularly scheduled meetings such as curriculum meetings or school board meetings, and
FIGURE 1

CHART FOR COLLECTING AND ANALYZING FIELD STUDY DATA

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Systematic Data Collection</th>
<th>Sporadic Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>formal interviews</td>
<td>formal observations</td>
</tr>
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<td>Instruments</td>
<td></td>
<td></td>
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<tr>
<td>Time intervals at which administered or collected</td>
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<td></td>
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<tr>
<td>Validity and Reliability Checks</td>
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</tr>
</tbody>
</table>
demographic data, such as student test records or absentee records. Sporadic data collection refers to those things which the field study cannot collect at regular intervals, but which must be collected at the various times they happen to occur. Included here are informal conversations with teachers, administrators, parents or students, informal observations, any special school meetings which are called and any serendipities or other unanticipated events.

The strategy for dealing with tense tasks includes: (1) determining appropriate instruments for each item (2) establishing time intervals at which such instruments are to be administered or data are to be collected. Examining each task in terms of the sub-heading for strategies provides a way to ascertain whether sufficient evidence will be gathered which provides the necessary focus and density.

Such a chart is an aid not only in designing the study but also for continual analysis of the way in which the parts of the study contribute to the central focus. With a chart of the instruments used for recording various information there is less chance for data to be recorded in the wrong place. The central staff working on data analysis can quickly see which information should be cross-referenced and linked together. Thus, by looking at the chart, for example, the investigators might well want to examine observational data (observed behavior) with interview data (intended behavior). Or to check the difference between voluntary and solicited information, they might compare data from formal interviews with that from informal conversations.
Indicating ways to determine the validity and reliability of the data further alerts one to areas which must be stressed to provide useful data.

Charting the information from a field study with continual reference to this guide during the study, is one way to avoid losing useful information which is collected but buried in the data because there was no precise place to record the data.

With this chart as an outline to devise instruments for specific field studies, a rapid system for processing information, such as mark sense cards, can then be used to code and process data from systematic data collections. This would decrease the amount of time and personnel needed for data analysis by the central staff. Such a system was not worked out for the exemplary study. As a result the central project staff soon became inundated by all the data gathered. A continual time analysis could not be done. However, using a system, such as mark sense cards, would work only because a prototype study had been done which provided the necessary experience to predict significant areas for field studies. With the first study such predictions were much more difficult.

The continual analysis is important not only to detect change over time, but also to provide some feedback to the project residents. Otherwise they may begin to question the fact that they are working to collect the data, yet find no evidence that the data are being used by the central project staff.
In order to determine the overall interference of a project resident in a school, it is recommended that the project resident be asked to record his thoughts about the project daily and to assess himself as a variable when systematic instruments are used. An observer congruency scale is recommended for observation instruments. A similar provision should be part of the interview instruments, as well as a place to record the resident's interpretation or opinion of the interview situation. A daily record of the resident's thoughts about the project could include frustration regarding his work, ways in which he has interfered with the project, ways he has refrained from interfering with the project or an account of his major activities for the day.

In the exemplary study it was found that the project residents voluntarily began to write paragraphs on their concern for influencing the situation. To retain the richness of such data project residents should not be constrained to a particular format. This report should be a way for them to express their concerns as they see fit. However, such information should be recorded in one place. A folder can be set aside in which to keep such reports. The project resident would simply be asked to record the data and his initials. Then he should be free to structure his own report. At the end of his comments, he can be asked to record his influence on the school that day by marking his position on an observer congruency scale, such as that recommended for use with specific observation instruments.
During the exemplary field study the project residents became concerned about their ability to remain alert during observations as they became more accustomed to the site. They were concerned about "taking things for granted." To counteract observer fatigue members of the central investigatory staff visited the field study sites several times and worked with the project residents. But this was not enough. Thus it is recommended that besides having a project resident at each site, another observer be trained along with the project residents. However, this person would act as a roving observer, alternating between the various field study sites. His job would be the same as that of the project residents. Yet by alternating among the sites he could guard against the problem of becoming too much a part of one site. At the same time the constant presence of the project resident at the site that permits one to gain rapport with teachers and to gain insight as a result of familiarity with a situation, is preserved. The use of a roving observer would also provide a reliability check upon various instruments used. It could further alert the central staff to differences between the uses of the innovation at the field study sites.

The recommended structure of the investigatory staff is then represented in a chart on page 170. The central project staff consists of the principal investigator who is ultimately responsible for the investigatory design, data analysis and final report. With him are several persons working part time to provide the continual data
analysis needed in order to (1) alert the project residents to particularly important issues (2) provide feedback to the project residents on their work. This staff will also help with the final data analysis for the entire project. It is expected that graduate students will be trained for such work, who can provide the part time help. A secretarial staff will also be a part of the central project staff.

A project resident is recommended for each field study site to gather data. The resident should be at the site continually to provide the constancy necessary to (1) gather unanticipated as well as anticipated data and (2) become a regular part of the school environment. The project resident should also work with the design of the project and the final report, analyzing and summarizing data. His experience at the field study site should particularly enable him to provide insights for interpretation of the data.

Working with the project residents at the sites would be a roving observer who alternates among the field sites. His function is to provide a balance between the perspectives of the project residents who may tend to consider only the site at which they are working and the central staff which will not have much first hand knowledge of the sites. The roving observer can also provide a reliability check upon the observations and interviews of the project residents.

The major weakness of the exemplar study resulted from insufficient time for data collection and analysis and lack of personnel for data analysis. This it is recommended that field study proposals be structured to include sufficient time for data analysis. At least two to
FIGURE 2

FIELD STUDY ORGANIZATION

Central Project Staff
(continual data analysis)

Roving Observer
(balance perspective between central staff and residents)

Project Resident  Project Resident  Project Resident  Project Resident
(data gathering)
(summary analysis)
three years should be devoted to data collection and analysis. This provides time for the novelty of a new project to wear off. It allows time for trends and patterns in the use of the innovation to emerge. And it provides time to conduct insightful analysis of the data.

Finally it is recommended that an adaptive system be built for the investigation. If the study continues for several years, it is likely that the instruments first used will not provide refined discriminations. But as the study continues, the project residents and the central staff will be able to detect particular areas of interest to pursue. The study of the situation to date will lead to such considerations. Thus, the field study will provide better data by refining the instruments as the study continues. In this way the investigatory staff will be able to focus on issues which emerge as key factors for the innovation. A commitment to remain with the initial instruments would provide more data which would fit a predetermined plan of analysis. But it would be a crude analysis in comparison with instruments which were refined on the basis of experience in studying an innovation. Moreover, since a primary goal of field studies is to improve an on-going situation, there is little desire to attempt to maintain a situation that is non-changing.

Conclusion In terms of the strengths and weaknesses of field studies as shown in the exemplary study it can be stated that (1) field studies can provide useful data and (2) field studies are feasible. A number of weaknesses of the exemplary study were discussed.
However, these limitations were due to the specific conditions of that study. Recommendations were given to prevent recurrences of these weaknesses in future studies and to aid in the refinement of field study methods. Thus, in terms of the examination of field study strategies as applied to an exemplary project, it can be concluded that field study methodology is an appropriate and viable strategy for evaluating educational changes in the classroom.
APPENDIX I

OBSERVATION INSTRUMENT

Code _________________ M T W T F _______________ AM ____ PM ____ PR: ____

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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Boys ___ Girls ___ Total ___ Time Beg. ___ Time End ___ Total Min. ___

I. SUBJECT: RDG WRI ENG MAT SCI HIS GEO SOS MUS ART HLT XXX

II. MEDIA: FLM FST SLD OTR PIX REC TAP BUL CHA M/G MDL CRM

III. PRINT: TXT REF SUP PAM MAG NEW DUP WKB XXX __________

IV. KEY MEDIA #_________ TITLE ________________

A. Time Used 1 2 3  B. Procurement S T O U ___

Whole ___ Part ___ Set-Up S T O U ___

Sound ___ Sile ___ Projection S T O U ___

T-Nar ___ S-Nar ___ Breakdown S T O U ___

St/St ___ Run ___ Return S T O U ___

V. Technical Problem: ________________________________

Reaction and Solution: ______________________________

VI. PRE-MEDIA ACTIVITY

Interaction: Whole Sml Grp Content Summary TCHR STDT

Tchr-O Stdt-O Vocabulary 0 P 0 P

Purpose: Prescr Alterna Key Points/Quest 0 P 0 P

Questions: Converg Diverg Test Announced 0 P 0 P

Co Guide Used N # ___ Other: ____________________
VII. POST MEDIA ACTIVITY

Interaction: Whole Sml Grp Content Summary 0 P O P
Tchr-O Stdt-O Vocabulary 0 P O P
Purpose: Prescr Alterna Key Points/Quest 0 P O P
Questions: Converg Diverg Test 0 P
Other: ____________________ Other: ____________________

VIII. ASSIGNMENT

Teacher _____; Choice _____; Writing: Single ___ Varied ___
Media: Single ___ Varied ___; Project: Single ___ Varied ___
Reading: Single ___ Varied ___; Other: ____________________

IX. Pre-Observation Context: ________________________________
Post-Observation Context: ________________________________

X. GENL. LESSON TYPE: INT DEV REV SUM MUP ENR XXX

XI. OBSERVER CONGRUENCY SCALE: 1 2 3 4 5 6

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NOTES: Code _______ Date _______
APPENDIX II

INTERVIEW SCHEDULES

INTRODUCTORY TEACHER INTERVIEW SCHEDULE

1. Would you tell me a little about yourself? In today's interview, I would like to get some information about your past experience with films and filmstrips.

2. Thinking back over the past school year, did you show your class any films or filmstrips? About how many films did you use? How many filmstrips?
   a. If none . . . how did that happen? (Probe) Skip to No. 10.
   b. If many . . . how did you go about arranging to do this?

3. Were there any films or filmstrips that stand out in your mind as being very good?

4. What was it that you particularly liked about them?

5. Were there any films or filmstrips that you can remember as being particularly poor?

6. What was it that you disliked about them?

7. a. How did you generally use films in your class?
   b. How did you generally use filmstrips in your class?

   Probe: Can you give some specific examples?

8. Sometimes films we feel are good, don't do the job in the classroom. Under what circumstances have you found films or filmstrips to be most helpful?

Now I would like to find out how you generally used to go about selecting a film for class use. By the way, from here on, when I use the term "film" I would like you to think also of filmstrips.

9. What sources of information about films did you generally rely upon?
   a. Thinking back to . . . (#3) How did you go about selecting this film?
   b. Is this generally the way you go about selecting films?
10. How do you think that you will select films this year?

As you know, I am talking with teachers on several grade levels. I am interested in the goals or objectives of the ____ grade.

11. Would you mind telling me what they are?

   Probe: Degree of importance.

12. Some teachers that I work with have told me that in addition to the goals established by the other teachers they have a personal goal for their class. Are there any goals which you have as an individual that you haven't mentioned?

   Probe: Degree of importance.

13. Taking (most important objective given above) how do you go about accomplishing this?

   Probe: Examples - Degree of support given by:
   a. principal
   b. other teachers
   c. parents

14. Repeat #13 for a few other important objectives.

15. Taking the goals you have mentioned, how have films last year been used to achieve them?

   a. Let's take (first goal) Probe: Examples

   b. Let's take (second goal) Probe

16. Do you feel that the films and filmstrips available this year will help you to:

   a. (First goal) Probe

   b. (Second goal) Probe

So far we have talked about your past experience with films, the educational goals for your grade level, ways to achieve them, and how films and filmstrips might be used to reach the goals. I would like to know now your personal reactions or feelings about these.

17. How do you personally feel about the goals for your grade level?

18. Would there be any changes you would like to see in these goals?

   Probe for examples.
19. How do you feel about the ways (13) you have discussed for accomplishing these goals?

20. How do you feel about the prospects of using films and filmstrips this year?

21. Are there any drawbacks you see to them?

22. Do you feel that there are any problems associated with the operations of the projectors?

23. Do you think that the student's view toward the role of the teacher might change as a result of the use of films in the classroom? How? Examples.

24. Would I be correct in summarizing your feeling towards films by saying ...?

25. Is there anything else that you would care to add at this time?

Thank you for your time. I'll be away next month but I am looking forward to talking with you again in November.
TEACHER INTERVIEW SCHEDULE 1

This schedule is to be used with all Panel Members in the district three times: during the months of November, January, and March. Note particularly with questions II and III the repetition for films and filmstrips. Let the nature of each of these questions flow from a general list of titles to a specific item in each question. I.e. "From these several good recommendations which is the very best?"

I. PRIMARY QUESTION: Generally speaking, how has the use of films and filmstrips been working for you?

PROBE QUESTIONS:

a. Can you get the materials you want?

b. Can you get them when you need them?

c. Do the machines work satisfactorily for you?

d. Are your room conditions—light control, ventilation, screen, etc.—satisfactory?

e. Are there aspects of the situation you wish were different? What are they?

f. What circumstances of this situation would you think most teachers would appreciate?

II. PRIMARY QUESTION: Since our last meeting, have you used any films (repeat this question for filmstrips) which stand out in your mind? (Note: Get list of outstanding films and filmstrips from teacher before concentrating on probe questions concerning a single outstanding film or filmstrip.)

PROBE QUESTIONS:

a. How did you learn about this material? (Additional probes: from other teachers? from grade level chairman? from curriculum supervisor? from principal? from AV specialist?)

b. How did you use it?

c. Why do you feel it was especially useful to you?

d. Do you expect to use it again? When? With what group? In what way?
e. Did you tell anyone else about it? (Additional probes: see probe question (a) above).

III. PRIMARY QUESTION: Since our last meeting, have you used any films (repeat this question for filmstrips) which were not as useful as you had hoped? (Note: get list of films and filmstrips before concentrating on a single one for probe questions.)

PROBE QUESTIONS:

a. How did you learn about this material? (Use same probes as in IIa).

b. In what ways were these materials not as satisfactory as you had hoped?

c. How did you use it?

d. Would you use this material again? For what purpose? With what group? How would you change the way you used it?

IV. PRIMARY QUESTION: Have you noticed any particular student reactions to these materials?

PROBE QUESTIONS:

a. What was (were) the general reaction(s) of most students—or changes in students—that you have noticed? To what do you attribute this reaction (these reactions)?

b. Have there been any special student requests or questions that these materials seem to have triggered? What are they? To what do you attribute these requests or questions?

c. Have the students in general reacted any differently to these materials than they have to other classroom materials (textbooks, workbooks, maps, feltboards)? How would you describe this difference? To what do you attribute this difference?
TEACHER INTERVIEW SCHEDULE II

This schedule is to be used with all Panel Members in the district three times: during the months of December, February, and April. Before the interview, review the record of the "First Interview Schedule." The "goals and objectives" section of the First Interview are related specifically to Probe Questions 1-d of this schedule.

PRIMARY QUESTION 1: What ways of using these materials have you found so far?

PROBE QUESTIONS: a. What ways of using these materials have you found especially satisfactory? Why do you think these ways have been so satisfactory?

b. Have you tried some things you won't try again? What are they? Why wouldn't you try this idea again?

c. How have you generally selected these materials for use? Did you use any special criteria to select the materials you have used this past month?

d. Do you recognize any goals and/or objectives (either personal or grade-level) that you feel are being better realized through the use of these materials?

PRIMARY QUESTION II: Has the use of these materials made any difference in planning your lessons?

PROBE QUESTIONS: a. What is this difference? To what do you attribute this difference? (Note optional probe questions: 1) Has the amount of time spent in preparation for classes changed since the media have been installed? 2) Has the time previously spent on other activities changed? 3) How much time did it require for you to learn to use the projectors? 4) About how much time per month do you spend previewing films?)
b. Does the use of these materials seem to take more or less time than before? In what ways?

c. Do you find you can preview the materials as often as you would like? How do you do this?

d. Do you feel you are using more or less materials of other types? About how many more or less? How are you using them? Why did you select these?

PRIMARY QUESTION III: Are there any areas in which these materials have added to your information or knowledge?

PROBE QUESTIONS:  
a. What are these areas? (personal, curricular, methodological)

b. What kind(s) of knowledge have they contributed?

c. Are there any particular curriculum areas you feel are being affected by the availability of these materials? What areas are they? How have they been affected? Why do you think they have been affected this way?

d. Do you think these materials help more with facts, or vocabulary, or attitudes, or skills? In what ways? What do you think the materials help you do best? Why?
FIRST ADMINISTRATIVE INTERVIEW

This schedule is to be used between November 1 and 11, 1965 with Principals of all buildings participating in the project. Question III calls for information about the goals of the school. Residents should secure any available printed information on school goals prior to the interview. Question IV responses may already be known to you through prior work. Develop the appropriate introductory and transitional statements required by your knowledge of Question IV.

I. PRIMARY QUESTION: How did you first hear about your school becoming involved in Project Discovery?

PROBE QUESTIONS:

a. What were your initial reactions? Have your reactions changed since? Why?

b. How did your teachers react? Have their reactions changed since? Why?

c. How did you work with the faculty in preparing for Project Discovery?

d. Have you ever been involved with other projects or experiments (in this or other schools)? E.g., team teaching, ITA, television use, teacher aides, language laboratories, tryouts of curriculum materials.

II. PRIMARY QUESTION: What factors do you as a principal look at in judging Project Discovery?

PROBE QUESTIONS:

a. In general, would you say Project Discovery was going the way you expected it to?

b. Are there any unusual occurrences in your mind of things that went better than you expected? Things that haven't happened that you thought might?

c. What would you estimate has been the overall reaction of your faculty? of the students?

d. Were there any reactions to the delay in being able to use the Project Discovery materials?
e. Have there been any complaints or comments about Project Discovery from:
   1 - teachers, 2 - librarians, 3 - custodians,
   4 - students, 5 - parents, 6 - the community?

III. PRIMARY QUESTION: In your opinion, what are the most important educational goals of your school?

   PROBE QUESTIONS:
   a. Do you feel Project Discovery will be especially helpful in accomplishing some of these goals? How?
   b. Is Project Discovery changing any of these goals? How?

IV. PRIMARY QUESTION: How was the decision made regarding the location of the films and filmstrips?

   PROBE QUESTIONS:
   a. What is the school policy regarding the use of Project Discovery materials:
      1 - by teachers, and 2 - by students (if not already in print). Who decided? Has there been any change?

V. PRIMARY QUESTION: Is there anything else about Project Discovery that you would care to comment on?
SECOND ADMINISTRATIVE INTERVIEW

This schedule is to be used during February 1 through 15, 1966 with all building Principals participating in the project. Question II requires the Resident to have made a preliminary check of the media library cards to become familiar with any media use recorded for the Principal.

I. PRIMARY QUESTION: How do you feel Project Discovery has developed since our last interview?

PROBE QUESTIONS:

a. Have there been any comments about Project Discovery from teachers? Students? Parents? Others?

b. As a result of Project Discovery, do you think that teacher morale is higher or lower? Why?

c. Do you think the teacher's workload has changed because of Project Discovery? Has this made teaching easier? How?

d. What effects do your teachers feel it has on the children? Have you noticed any other effects?

e. Are there any particular groups of students you feel have been especially affected by Project Discovery? What about the culturally deprived?

f. How do you manage to keep informed about Project Discovery?

II. PRIMARY QUESTION: If the media library cards show media use by the Principal, the question is:

What were your reactions to the films and filmstrips you were able to personally use?

If the media library cards do not show media use by the Principal, the question is:

Have you had the opportunity or occasion to use any of the films or filmstrips personally?

If so, what were your reactions to the materials?
III. PRIMARY QUESTION: Have you had an opportunity to observe teachers or students using films?

PROBE QUESTIONS:

a. Were there any films that seemed to be especially useful? Which ones? Why?

b. Were there any that seemed less useful? Which ones? Why?

c. Are you able to visit the classrooms as often as you would like?

d. Have you noticed any change in the way teachers use films? Why? Do you recommend certain methods to teachers? Which?

e. Do you recommend particular films or filmstrips to teachers or students? If yes, what were some of them? Why recommended? How did you learn about them?

f. Do the teachers have an opportunity to preview films during the day?

g. Do you encourage teachers to exchange comments on particular films or methods of using films?

h. Do the teachers have an opportunity to observe other teachers using films in class?

i. Have you talked with many people outside the school about Project Discovery? Parents? Visitors? Local citizens? Representatives of the companies? About how much time is taken up per week with this type of work?

IV. PRIMARY QUESTION: Have you had any conversations with teachers about Project Discovery?

PROBE QUESTIONS:

a. Have they requested any help? What type?

b. Have they requested any additional AV equipment or materials? If so, what? Did they receive them?
V. PRIMARY QUESTION: From your experience as a Principal, what questions would you be interested in if you were from another school system and were here on a visit to see Project Discovery?

VI. PRIMARY QUESTION: Is there anything else about Project Discovery that you would care to comment on?
THIRD ADMINISTRATIVE INTERVIEW

This schedule is to be used during April 25 through May 6, 1966 with the building Principals participating in this project. Question III requires the Resident to review the results of the First Administrative Interview and any related school documents regarding educational goals. In addition, the Administrative Survey Instrument should be taken to the interview for the Principal to complete at a later time.

I. PRIMARY QUESTION: How do you feel Project Discovery has gone since our last interview?

PROBE QUESTIONS:

a. Have there been any comments about Project Discovery from teachers? students? parents? others? Any particular groups of students especially affected by Project Discovery?

b. Have you noticed any changes over the year in the way teachers relate to films? Any change in the students?

c. Were there any expectations you have had of Project Discovery that have not taken place?

d. What effects have the visitors, company representatives, etc., had on you? Your teachers? Your students?

e. What aspects of Project Discovery have you liked? Why?

f. What aspects of Project Discovery have you disliked? Why?

g. As you look back over the year, are there any things pertaining to Project Discovery that you would do differently? What? Why?

h. Are there any points of advice you would give to a visiting Principal who was thinking of starting a program like Project Discovery?

i. What are your personal reactions to the costs of Project Discovery in terms of time, money, and personnel?
II. PRIMARY QUESTION: In general, how aware of Project Discovery do you think the local Board of Education has been? Do you think they consider this a major activity or project of the school?

III. PRIMARY QUESTION: In our first interview you mentioned that in your opinion the major educational goals in your school were . . . . .

PROBE QUESTIONS:

a. Do you feel that Project Discovery has helped to accomplish any of these goals?

b. Has Project Discovery changed any of these goals?
# APPENDIX III

## RECORD KEEPING FORMS

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### SECTION X

<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Type of Meeting</th>
<th>Discussions or Decisions About Project Discovery</th>
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APPENDIX IV
TEACHER SURVEY INSTRUMENT

PROFESSIONAL BACKGROUND OF TEACHERS

School: _____________________  Teacher: ____________________

We request the following information in order to describe more accurately and completely the professional background of teachers participating in Project Discovery. This information will be transferred to coded cards without identification by name and the information will be reported in terms of groups of teachers rather than individual cases.

I. Please list below those professional educational organizations of which you are currently a paid member. Please list in order of primary interest.

<table>
<thead>
<tr>
<th>Organization Title</th>
<th>Organization Title</th>
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<tbody>
<tr>
<td>1</td>
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<td>2</td>
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II. Please list below those professional meetings or conferences (outside of local district meetings) which you have attended in the past year.

<table>
<thead>
<tr>
<th>Sponsoring Organization</th>
<th>Meeting Topic</th>
<th>Place of Meeting</th>
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III. Please list below those professional journals which you currently read regularly, and those which you examine occasionally through some other source such as local teacher's room, library, friends, etc.

<table>
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<th>Read regularly</th>
<th>See and read occasionally</th>
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IV. Please indicate below any professional writing or speaking you have done for professional or educational organizations or meetings in the last three years.

<table>
<thead>
<tr>
<th>Writing</th>
<th>Topic of Writing</th>
<th>Date of Publication</th>
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<th>Speaking</th>
<th>Topic of Presentation</th>
<th>Date of Presentation</th>
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V. Please indicate below those factors in your professional training and experience which have had the greatest influence on your ideas and practices with instructional materials in the classroom. Please note, insofar as possible, the relative importance of the influence. You may check one or more and no specific number is expected.

General methods courses in teacher training

Specific audio-visual courses in teacher training

Examples of media use seen in most professional education courses

A teacher-friend who used educational media with success and satisfaction

The assistance of a supervisor in solving instructional problems

An in-service training program of a school district where I taught

Reading a particular article or book about media use in teaching

A memorable experience from television or film viewing which aroused my interest in using the materials

Others: ____________________________________________
VI. Please indicate below any special projects or experimentation in which you have participated at this or any other school. This should represent some new or unusual activity related to classroom instruction in which you played a direct role. Examples might include: a team teaching trial, use of educational television by selected grades or in specific subject matters, the use of teacher aides, a non-graded primary school.

<table>
<thead>
<tr>
<th>Descriptive Title of Project or Experiment</th>
<th>Grade Level</th>
<th>Subject Matter</th>
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VII. Most recent courses taken:

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<th>Date Taken</th>
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Please indicate your grade level preference.

First Choice ____________________________________________

Second Choice __________________________________________

Please indicate your subject matter preference.

________________________________________________________________
BIBLIOGRAPHY

Books


Articles and Periodicals


Reports


Unpublished Material

