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ABSTRACT

The authors discuss the information needs of developers in the early prototype phase, where the developer requires input that provides guidelines for the tryout revision cycle that cannot be satisfied by pre- and post-test data. When a develop-user relationship conducive to open communication allowed users to convey their perceptions and problems to developers, developers listened, interpreted, reformulated and re-presented the product to the user. The authors suggest that pilot testing of prototypes for adult users can be regarded within the framework of a two-way communication system. The communication model identifies barriers impeding the sending and receiving of messages, such as differences of role, expectation, and language. These barriers must be acknowledged and broken before the developer can obtain information critical to further development of the product. (Author)

COMMUNICATION PROCESSES AND FORMATIVE EVALUATION: A CASE STUDY

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In this paper we describe some of our experiences in conducting the pilot test of the CSE Elementary School Evaluation KIT: Program Planning and discuss some of our tentative conclusions arising from these experiences. The conclusions are based on the premise that early formative evaluation of products can provide the developer with user information to guide the further conceptualization of the product. Therefore, we believe that pilot tests should be scheduled soon after the developer has made his first provisional decisions about the content, sequence, and method of presentation.

Whereas formal, preplanned tests to gather quantatative data may be more appropriate for later stages of product development, informal, clinical procedures and qualitative data should be considered at the early stage where the information will be used to guide development.

Specific skills that we found to be important in conducting such early pilot tests can be termed communication skills. But they are not those communication skills in which product developers are usually trained--that is, skills for transmitting information. Rather, they are the skills involved in receiving information: observing and listening to people, ascertaining the meaning of what they are saying or doing, and teasing out the implications of that meaning for the future development of the product. Although there are difficulties in establishing communication between developer and practitioner, we believe the advantages of producing a product responsible to user needs make the attempt to analyze and deal with them worthwhile.

In this paper, we would like to take you with us through the experiences which led us to this conclusion. We will begin by describing the Program Planning KIT in its current national field test form. We will then go back to one of our first pilot tests--when the materials were in quite different form--and describe to you what happened with one pilot test team. We will indicate to you what we learned about the KIT and what we learned

about the process of communication. After restating our conclusions, we will outline the similarities between our position and the concerns of particular writers in related areas.

The CSE Program Planning KIT

The CSE Elementary School Evaluation KIT: Program Planning is the second in a series of four self-instructional packages designed to help elementary school staffs proceed from needs assessment and program planning through formative and summative evaluations. The first KIT* provides procedures for ranking goal statements, assessing student performance on highly ranked goals, and making decisions about high priority needs. The third and fourth KITs, currently under development, provide procedures to help school principals collect and analyze information to make decisions about program improvement or program continuation.

The Program Planning KIT is intended to provide an elementary school principal and a planning team of teachers with the structure and resources to plan for programs and their evaluations. At the end of the program planning process, the school staff will have produced a written program plan containing a description of the instructional, evaluation and management components of a program which can be implemented in their school. The KIT can be viewed as a self-administered inservice training program conducted at the school. It is anticipated that the first time the KIT is used, teachers will be simultaneously learning skills and applying them in planning their own program. In subsequent planning cycles, it is more likely that the KIT will be used as a resource rather than to provide instruction.

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*CSE Elementary School Evaluation KIT: Needs Assessment. (Boston: Allyn & Bacon, 1972).

The KIT currently consists of a number of components:

The Coordinator's Handbook helps the principal (or his designate) to initiate the planning effort. It provides guidelines for facilitating the work of the Planning Team and the Evaluation Planner; for developing a management system for both the program and the evaluation; for writing the program plan; and for institutionalizing on-going planning and evaluation in the school.

The Planning Team materials consist of a Procedures Booklet providing step-by-step instructions to a teacher planning team for each part of the planning process, a Resource Book containing additional information and practice exercises, a Chronicle in which team records are kept, and Leader Guide Cards to assist a team leader in preparing for and conducting team meetings. Each planning team chooses from one of three planning strategies--Objectives-Based, Teaching Models, or Materials-Based--and uses the set of materials developed for that strategy to produce a written program plan.

The Evaluator's Guidebook provides the individual acting as Evaluation Planner with a general orientation to evaluation. Evaluation Planner Guide Cards, keyed to the Procedures Booklet of each strategy, give him detailed suggestions for conducting discussions which lead the team to decisions about how to evaluate their program.

Pilot Testing of the CSE Program Planning KIT

At the Center for the Study of Evaluation, we regard evaluation as "the process of determining the kinds of decisions that have to be made; selecting, collecting and analyzing the information needed in making these decisions; and reporting this information to appropriate decision makers" (Klein, Fenstermacher, & Alkin, 1971, p. 9). In agreement with Baker and Alkin (1973), we accept the view that formative product evaluation consists of activities that will provide developers with the information they need to modify and improve their products. We think of pilot testing as a very early stage of formative evaluation during which first draft components of the product are tried out with a sample of users.

Early in 1973, we started making plans for the pilot test of the Program Planning KIT. Although we had begun to conceptualize the KIT, only parts of it were written. An earlier formulation of the KIT took the form of a set of

procedures to help local elementary school principals select "the best available" instructional program (materials) for achieving pre-specified goals. But by the time we began to plan for our pilot tests, our conception of the KIT had broadened considerably. We had decided that a planning team of teachers should be the major participants in instructional planning, with the principal in a facilitating role. Instead of a single planning strategy, there now were three alternative planning strategies. One was a modification of the original strategy for selecting a program. A second strategy used behavioral objectives as the building blocks of the program; the third used conceptions of teaching and learning (teaching models) as the basis for constructing the program.

At the time of the pilot test, we were committed to the idea that the purpose of the KIT was to help school level planners produce a written plan that would describe an educational program so as to facilitate both implementation and eventual evaluation activities. We felt we had identified some of the tasks related to achieving this broad purpose. We did not, however, have a final commitment to the content, sequence or form of the KIT; we felt that potential users could help us make these decisions.

Our initial plans for the pilot test were similar to the plans produced by other institutions who develop instructional products. We were particularly interested in schools that served minority students. We wanted planning teams of teachers who would agree to use the strategies and materials we provided them; to spend the planning time suggested in the KIT; and to adhere to the suggested schedule. We wanted participants who would complete our tests, questionnaires, and submit to us a written copy of the program plan they would produce. We also planned to have at least one CSE staff member attend every planning session as an observer. In short, we thought our-

selves receptive to the ideas of participants in the pilot test, but we wanted to control the conditions of the pilot test and the collection of data.

To identify the schools that would be included in the pilot test, we contacted school officials in a nearby district and were given suggestions as to principals likely to participate. In the period between January and April of 1973 we phoned fifteen principals, received invitations to speak to teachers at seven schools, and were finally able to get commitments from teachers in three schools (who formed a total of eight planning teams) to participate in the pilot test. Because the time required of the teachers was considerable (15-24 hours), in order to recruit participants, we had to make arrangements for district in-service salary credits.

When we scheduled our pilot tests, we did so with some misgivings. We could have used more time to prepare our first draft materials but our project time line was forcing us to act. We also felt that conducting the pilot tests before we thought ourselves ready might have some benefits. First, it would create production deadlines. Second, it would force us to justify our ideas in concert with teacher teams. Third, we reasoned that we could remain more open to teachers' ideas about revision and subsequent development if we were not committed to, and heavily interested in, a more polished version of the KIT. We wanted to use the materials we did have as a reference point to which people could react.

In retrospect, our method of developing and evaluating was closer to a problem-solving model in which client needs and developer skills combine to produce a product, than to a research-development-dissemination model in which the developer incorporates research findings into an instructional format whose effectiveness is then tested by user performance. Perhaps we

adopted this method because of the tentative nature of the research literature on planning and curriculum development; perhaps the project staff was impressed by the complexities of the existing school setting as well as the number of decisions required in planning for improved school programs. In any case, because of time pressures, our intellectual and professional predispositions, and our working styles, we wanted to blend the judgments of practitioners with our own.

One Pilot Test Experience

The first school in the pilot test was composed of more than 90% minority students and according to the principal, "All the problems of society are in this school." We had two planning teams in this school.

We provided the teams with materials for the teaching models strategy, which consisted of a large blue loose-leaf binder, containing approximately 100 typed pages, and a set of six descriptions of teaching models printed on half sheets and averaging about 20 pages apiece. The loose-leaf binder was divided into sections labeled Introduction, the Program Plan, Description of the Program Plan, and Agendas for planning meetings.

The first day of this pilot test seemed to result in catastrophe. After seeing the materials, one of our two planning teams decided to drop out of the pilot test--they even tried to influence the second team to do likewise. The team that decided to drop out was composed of experienced teachers. However, the idea of planning programs using a "big blue book" that was "complex" and "hard to understand" overwhelmed them. They were completely unprepared to follow the directions for leading themselves through the planning process. None of the team members wanted to prepare for, or lead, a planning meeting. They were angry when they found out that in order to follow our planning

procedures they would have to "fill out more forms." Although we thought we had explained ourselves clearly, the teachers felt we had misrepresented systematic planning both in terms of the amount of work involved and in what they would achieve through their efforts. They said: "We need a system to enforce discipline. . . to communicate with administrators. . . to get the materials and resources we need to teach." They wanted a system to solve their problems. What we seemed to be offering was more paper.

In the process of discussing whether to drop out, the team spent a lot of time telling the CSE observer about the difficulties and strains of teaching in a school with problems.

> There is no discipline here. It's not that the kids are vicious or violent. They are really good kids. It's that there is so much to overcome, and all my energy is spent just trying to keep the lid on things. . . We don't have any facilities here that do us any good. We can't get into the library. We don't have any teacher aids, and what money we do have for materials is being spent in the lower grades. This in-service thing isn't what we were told it was. It can't be done in the time we are supposed to do it in . . . There is no solution to the problems we have at this school. Or at least the solutions are not in your blue book. I probably would have been interested and excited about going through these materials when I taught at _____ School. These materials won't do me any good here.

At the end of this first meeting, the team turned in their notebooks.

We reacted to this turn of events with desperation. We wanted someone out there in the real world to react to our materials. We had spent three months getting into our pilot test schools and making arrangements for in-service credit, and after the first day of pilot testing, we had lost one of our two teams. There was also a good chance that the second team would follow the first. We contacted the principal and the members of both planning teams. We promised that there would be no additional work for the teachers beyond the meetings for which they were receiving credit, and that we would tailor the planning meetings to their needs. We stressed the

sincerity of our desire to have their ideas for the development of our materials. At this point, our plans for controlling the conditions of the pilot test and the collection of data were discarded.

We did convince the members of the team to return and the members of the other team to remain in the pilot test. Our subsequent experience with the two teams was similar, but we will focus on the "drop out" team so as to provide a specific illustration of how this team, perhaps more than any other, demonstrated to us the importance of listening to product users and understanding their point of view. At this early stage of pilot testing, we came to realize that we needed communication skills related to receiving as well as transmitting information.

The second meeting was smoother than the first. The teachers spent much of the meeting communicating to the CSE observer what it was like to teach in a problem school. One teacher told of an experience that had just occurred that day.

> I have a boy in my class who was kicked out of school today. I am very upset about what happened because the kid is on the verge of going to pieces. His father, whom he adored, was murdered three weeks ago, and his mother is just getting out of the hospital. I have been doing everything I could think of to help him through his hurt, and have tried hard to make exceptions for him. Then along comes this other teacher who doesn't know what the situation is. Apparently the boy badmouthed this other teacher and she suspended him and told him, 'Just wait until I tell your father what you said to me.' I have argued for a long time that kids shouldn't be suspended without consulting the pupil's teacher. This kind of thing just shouldn't happen, and all I could do is just tell the kid that I was really sorry. I felt like crying for him.

As the discussion gradually focused on the task at hand, some time was spent identifying the goal for which the planning team wanted to plan a program. Although the principal had told us that a needs assessment had already been done, the planning team teachers were either unaware of it or they disagreed with the results. In any case it was obvious to both the team and our

staff observer that before planning could profitably begin, there had to be some kind of agreement on a program goal.

After being assured that changes in the materials would be made as a result of their comments from the first meeting, the team finally began to discuss the KIT itself. The team was told that entire sections would be eliminated (the introductory materials had particularly caused the team problems), and the remaining sections would be shortened and put into a different format. They seemed pleased with the stated changes. They tried to soften their criticisms and expressed their desire to provide the observer with suggestions "that would make the materials better so they wouldn't turn off" future users.

The staff observer and the team then jointly decided that instead of working independently, the planning process would be led by the CSE observer. For the first time in the pilot test, the team began to read the materials purposefully. A two-way relationship began to grow between the team and the observer. Something of the feeling of this growing relationship is reflected in the concluding remarks of the observer in his pilot test report for the second planning meeting.

> This group approaches tasks with great intensity and much feeling. They want us to know about the 'real' world of teachers. They spend a great deal of time relating their experiences in teaching. They are a marvelous source of anecdotes and insights into what it is like to try and survive as a teacher in a difficult school. They want to help and improve our materials, but they tend to move slowly and nitpick at times. I believe this is because they do not completely understand or believe materials like ours can be helpful. They are good critics from the point of view of teachers. Their crap detectors never seem to turn off. The relationship I have with the team seems to be growing in a positive direction. I believe we respect and like one another.

By the third planning meeting, the project staff had begun rewriting and repackaging the materials. We were using the suggestions of each of the planning teams in the school, going back to our typewriters, and developing

or rewriting materials based on the recommendations of our pilot test participants. The teachers approved of the changes being made in the materials and seemed surprised at the seriousness with which we took their opinions.

During the third planning meeting, it became obvious to the observer that the materials did not, even when revised, meet the expressed needs of the teachers. They talked of problems related to lack of supplies, inadequate physical plant, poor communications, lack of teacher aides, and a general lack of funds. Clearly, their major concerns were not related to the curricular and instructional issues for which our materials were appropriate. However, after the observer acknowledged that the materials did not seem to fit their needs, team members offered additional comments and observations about the materials. They reported that they found the use of teaching models in their classrooms to be an interesting idea. They suggested that organizing the materials in terms of meeting agendas resulted in "too rigid an approach." They suggested that the materials be organized by major steps or activities because teachers would have to "steal" whatever time they could and organize and schedule meetings to fit their schedules. They then volunteered to help the observer by going through their notebooks and removing all the pages they thought were irrelevant--leading to removal of about half the pages.

At this point, the CSE staff member told the teachers that we had been considering the development of a problem solving planning strategy that might be more useful to them than the teaching model strategy. The team immediately agreed that a problem solving strategy sounded more relevant. It was decided that the remaining two meetings in the pilot test would be used to explore that strategy. The team members retained the teaching models materials, however, and at the fourth planning meeting they began by spontaneously reporting to the CSE staff member how they would reorganize the teaching models

materials. They suggested simplifying the language and eliminating "theoretical" sections. On their own time they had been reading the descriptions of teaching models and were enthusiastic about them, suggesting that they should be introduced early in the planning process.

It was evident that the team members were now doing more than was asked of them and reading the materials voluntarily so they could make their criticisms. In his pilot test report the observer wrote:

> What I find interesting about the team's comments is the apparent change of heart from the first meeting. At the first meeting they said they really didn't want to read anything (or very little). They particularly said that they did not want to read at home. Let me hypothesize about this apparent change. First we have had an opportunity to develop a relationship. I am not just another outsider to them anymore. I think they believe that I care about them and their situation. They in turn want to be helpful to me and have an investment in the materials in that they have really been trying to help and improve them. . .

The remainder of the fourth planning meeting was devoted to formulating a problem solving strategy. Although the problem solving strategy was ultimately eliminated from the KIT, the efforts of this planning team in working with the strategy were relevant and helpful to the later development of the Coordinator's Handbook.

In the fifth and final meeting the team again reported back to the observer on their reactions to teaching model materials read between meetings. By this time they had voluntarily read all the descriptions of the teaching models. They said, "We really enjoyed reading them." They were able to discuss them intelligently demonstrating that they were aware of many of the difficulties involved in implementing teaching models in schools. They pointed out problems that our staff had not anticipated.

In retrospect it was our good fortune that we were able to talk this planning team into continuing in the pilot test. We emerged from the experience convinced that we had information to make the KIT more useful. Yet,

in the five sessions we held with this team they seldom used the materials as we originally intended them to be used, nor did they fill out our forms. What they did do was discuss their frustrations, problems, and points of view. They, not we, defined the rules of the game. As the observer stated in his last report for this team:

> These teachers seem to have needed someone to talk to who would care and listen. In reflecting back on the experience I am positive that they would have thrown me out of the school had I not listened to their problems. I was a good listener in large part because they forced me to listen by threatening to drop out if I did not.

In general this planning team forced us to face the fact that teachers working in schools have problems and needs that we outside the schools do not fully attend to. We decided later that some of the problems were beyond our control, but others we tried to deal with once they were brought to our attention. Perhaps most important, these teachers taught us that there are people "out there" who have relevant important things to say and that if we hope to produce products to meet their needs, we should listen to what they have to say.

What we learned about the KIT

In this section we will list some of the conclusions we reached concerning the KIT and its development based on this and subsequent pilot tests. Following this we will describe some of the communication difficulties we encountered, and what we did about them. In the last section we will mention other writers who share our concern.

From our experiences with this team and others which participated in later pilot tests, we received confirmation for some of our original assumptions.

1. A needs assessment must precede program planning. The planning team must be in agreement on program goals before it is possible for them to plan a program.

2. Planning programs at the local school level is an idea which is enthusiastically endorsed by teachers.

3. Planning in teacher teams is welcomed by teachers, but only if certain conditions exist. These are the availability of time and an assurance that teachers have some power; that is, that decisions made by teachers will count.

4. Teachers do not have systematic planning skills. Motivating teachers to plan systematically may be a task that requires more than the provision of self-instructional materials.

5. Alternative planning strategies seem desirable. Clearly the planning strategy we originally provided for one of the planning teams in this pilot test was inappropriate.

We received directions for further development decisions.

1. Someone is needed to prepare for and facilitate the planning effort within the school. The principal seems to have the potential to be a leader and facilitator. Certainly no program planning effort can succeed without his cooperation, and so there must be a role for the principal in any workable program planning system. Materials had to be developed for the principal or his designate. The Coordinator's Handbook was the result.

2. The physical appearance of materials is important. Bulky materials discourage the teachers. They must look simple and easy to read. Based on this, we developed a small Procedures Booklet and put all supplementary materials in a separate Resource Book.

3. Leaders on the planning team need easy-to-follow directions. Leaders must be reassured that they need not be "experts" or do excessive homework in preparation for leadership roles. We developed Leader Guide Cards that help the leader prepare for and and conduct each meeting.

4. Organizing the planning tasks in a sequence of meetings is too restrictive. To be practical and flexible the teachers will have to determine the content for each meeting and do the tasks at their own rate. Consequently, we organized the Procedures Booklet by sets of related tasks.

In addition to the above conclusions, we also developed some tentative ideas about methods of data collection to use throughout our pilot testing program.

What we learned about communication processes

Although our original intentions were to "listen" to participants in our pilot test, we did not anticipate some of the difficulties which we would

encounter. With hindsight, we see that these difficulties seemed to arise from differences between ourselves acting in our role as product developers and the pilot test participants acting in their role as teachers. The difficulties were compounded both by our initial unawareness of their source and then by our lack of previous training in dealing with them once we became aware of them.

As product developers, we were comfortable with our kind of written and spoken language. Our materials and our oral presentations were full of abstractions, generalization and definitions. The teachers, on the other hand, were comfortable with more concrete language (one teacher noted wryly the "child-speak" which often characterizes the sentence structure and vocabulary of elementary school teachers) and with details, anecdotes and references to specific children or situations. In order to send our message, we had to overcome the language barrier. If we wanted to talk to teachers effectively, we had to translate our language into theirs rather than decry their inability to understand ours. We found that our skill in doing this, even after we realized the problem, was minimal. We realized that we needed to train ourselves to change language systems.

Underlying the language difficulties was a deeper difference between the teachers and ourselves in perspective and purpose which interfered with our communication. Our perspective was long range, theirs short range. We were presenting a long term, indirect solution to what teachers regarded as immediate daily concerns. The fact that they had not yet found solutions to their immediate problems did not convince them that they should change their strategy, but merely intensified their search for quick answers. We, on the other hand, assumed as self-evident the practicality and rationality of long range solutions, and did not have arguments in our repetoire which made our

case convincing to the teachers. We realized that we needed to build a case for our view that would make sense within the context of the teachers' experience.

In addition, our purposes for the pilot test were different from those of the teachers. Our primary purpose in conducting pilot tests was to have teachers help us improve our materials. We indicated this to principals and teachers in soliciting their help for the pilot test, but we also stressed that, in exchange for their time, the materials themselves would help them acquire knowledge and skills of use to them. Since we had arranged for in-service credit, the teachers expected that they would learn techniques which would be of immediate use to them in the classroom as they did in other in-service courses. They were not prepared to work very hard on their own. Although they knew about our revision needs, they were not especially interested in spending their time accommodating them. They wanted help with their own work problems. Their initial skepticism that researchers from a university setting could provide anything of practical use to them was confirmed when they saw the voluminous materials we had prepared. Correspondingly, the more resistant they were. the greater their difficulty in focusing on any part of our materials which might be useful to them. We realized that we needed to rethink the pilot test experience so it would be a worthwhile one for them as well as for us.

In an effort to open channels of communication and meet some of these difficulties, we tried the following:

1. Listened empathetically and tried to understand the situation from the teachers' point of view.*

2. Encouraged the teachers on the planning team to talk about their problems even when such problems appeared to be irrelevant to the materials. (We often found these discussions gave us clues about contextual factors--particularly social ones--that might influence the use of the KIT.)

3. Encouraged the teachers on the planning team to use our materials or talk to us about them on their own terms--even if this meant that they never tried to use or discuss the materials in the way that we originally intended. (This non-directive approach often brought out and emphasized problems in the materials, or allowed the teachers to show us more workable procedures to build into the materials.)

4. Rewarded participants for their help. Sometimes we volunteered what amounted to consultant services in our efforts to help teachers with some of their problems. (Although what we offered the participants was limited, we believe that our gestures were important.)

5. Spent as much time as possible with the participants. The same staff member was assigned to a particular planning team for the duration of the pilot test. (This provided the observer with the opportunity to become well acquainted with the personalities, problems, and point of view of each planning team.)

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*Rogers (1969) described empathetic understanding as follows:

> This kind of understanding is sharply different from the usual evaluative understanding, which follows the pattern of 'I understand what is wrong with you.' When there is a sensitive empathy, however, the reaction . . . follows something of this pattern, 'At last someone understands how it feels and seems to be me without wanting to analyze me or judge me. Now I can blossom and grow and learn (pp. 111-112).

6. Became professionally and even socially close to the participants. During the course of meeting with a group of pilot test participants we often formed temporary relationships akin to friendships. Information was shared about families, jobs, goals, hopes, and frustrations. (We found that the development of close, personal relationships generally permitted the participants to communicate their perceptions to us more openly and effectively.)

7. Took extensive descriptive notes of what occurred during each meeting attempting to capture the participants' point of view. We tried to write low inference descriptions of each meeting, recording participants' words and actions as accurately as possible. (We found our records quite helpful for our formative evaluation purposes. It was not at all difficult to go back over our notes and pick out the problems that seemed to arise frequently.)

Our experience with the pilot test of the Program Planning KIT has led us to two propositions:

1. With products designed to be used by teachers in school settings, informal, relatively unstructured, pilot testing is a productive method for gathering information to guide development decisions.

2. The effectiveness of such informal pilot tests depends on the degree of communication established between evaluator/developer and product user. There are barriers to such communication arising from real differences in the perspectives of evaluator/developers and practitioners. The product developer must acknowledge their existence, and must develop skill in overcoming them. For example, product developers should be sensitive to the differences in language which they speak, and the language spoken by teachers, and be able to modify their own written and oral language. Product developers should be sensitive to the context within which teachers operate, and find ways to make the pilot tests a worthwile enterprise for both parties. Product developers need a broad array of methodological alternatives for gathering information--a repetoire which includes clinical skills of observation, listening, reflecting back, and field study skills for recording and interpreting information.

These propositions are related to current concerns in three areas: those of product development and formative evaluation; field research methodology; and knowledge utilization and dissemination. The following discussion is not

intended to review the literature, but rather to suggest how our perspective relates to what others have written.

Related areas of concern

Product development and formative evaluation

In their recent summary of types of formative evaluation, Sanders and Cunningham (1973) characterize those activities that occur early in the product development effort as "formative interim evaluation" activities because they deal with pieces of the product rather than the entire assembled package. They distinguish between formal and informal formative interim evaluation and note that in informal evaluation--which is generally unstructured--observations and discussions often uncover critical dimensions of the product that might otherwise go unnoticed.

Markel (1967) described the initial or laboratory stage of product development and noted that the types of data collected as well as the method for collection may be more varied during this early stage than at other later stages. She suggested that data at this stage tend to be clinical in the sense that they are the result of close observation and interaction with individuals or small groups. She additionaly observed that this clinical stage is often omitted in many product development efforts.

Baker and Alkin (1973) discussed the types of data that should be collected during the initial development stage and indicate the importance of obtaining information that reveals the effects of the product as well as information that leads to a diagnosis of what is wrong with the product. Although they implied a preference for formal data collection procedures, their emphasis on ascertaining user attitudes and satisfaction with the product as well as their concern with unanticipated side effects might suggest that

more informal procedures are also acceptable. They noted that since the developer should expect early drafts of the product to meet with only limited success, small numbers of subjects should be involved and they should be expected to provide "rich data."

There seems to be agreement, then, that a variety of means for gathering information at the early stages of development of a product is desirable. The decision as to whether to use formal or informal procedures (or both) may depend upon the use to which the developer wishes to put the information. If the information is to be used to revise a product whose specifications are fixed--that is, if only the means of instruction rather than the instructional goals are to be changed--then more formal pretest and posttest instruments may be appropriate. If, on the other hand, the information is to be used to make decisions about the goals themselves (and to learn as much as possible about the context within which the goals are being introduced and received) then more informal methods are appropriate.

Field Research Methodology

Clinical procedures for gathering information, and methods for recording non-standardized information seem far removed from an experimental research tradition that relies on control of variables, presentation of stimuli, and quantifiable responses. It is clear that this experimental tradition is not the only one that has a contribution to make to formative evaluation. There are other ways of obtaining information and of making inferences from it. Listening to and observing people in real life settings, and recording their comments and interractions makes use of techniques coming not from the experimental or measurement tradition but from the field research tradition of sociology and anthropology. For instance, Schatzman and Strauss (1973) stated:

> For the naturalistically oriented humanist, the choice of method is virtually a logical imperative. The researcher must get close to the people whom he studies; he understands that their actions are best comprehended when observed on the spot--in the natural, on-going environment where they live and work. If man creates at least some of the conditions for his own actions, then it can be presumed that he acts on his own world, at the very place and time that he is. The researcher himself must be at the location, not only to watch but also to listen to the symbolic sounds that characterize this world. A dialogue with persons in their natural situation will reveal the nuances of meanings from which their perspectives and definitions are continually forged (pp. 5-6).

Recording such observations obviously cannot be done on a structured form. Lofland (1971) noted that field notes or reports should be written by a researcher who has had physical and social proximity for a significant period of time with the people on whom he is reporting. He notes that such reports should be characterized by attention to detail; truthfulness in that the reporter should accurately describe what he sees and hears; and direct quotations from participants to capture the reality of the situation as they perceive it. In field notes such as these, inferences should be kept separate, in so far as possible, from description.

Knowledge Utilization and Dissemination

Many writers have recently expressed concern about the gap that continues to exist between practitioner and researcher. Baldridge (1973) has indicated that the real differences in perspective and orientation between these two groups have been incorporated into myths and stereotypes thus widening the gulf between the two groups and making open communication even more difficult. He notes:

> In the mythology of the field user, the researcher is an unfeeling egghead with computer printout in hand who advances impractical theories to schools populated with random samples. From the opposite viewpoint, the myth portrays a non-intellectual short-sighted person, bogged down in a world of lesson plans, report cards and Dick and Jane. These extreme, negative stereotypes disrupt or prevent relationships that might otherwise be beneficial (pp. 15-16)

A recent policy paper by the National Institute of Education (1973) notes that the "customary" product development model projects a "passive, compliant role for the school based consumer," and that this approach assumes that the schools will faithfully adopt and install research and development products in some uniform manner provided only that the research and development community demonstrates that they work. Among the difficulties with this view, the paper suggests, is that:

> It sees educational practice--or at least innovative educational practice--as a simple function of external research, development and linkage. Yet, what actually goes on in schools is a function of many others influences as well, including traditional lore, and craft knowledge, the perceptions practitioners have of the success or failure of trial and error innovation, and the particular needs and circumstances of special schools and communities (p. 53).

Early user involvement in the development of products is no guarantee that products responsive to the needs of the practitioner will emerge. Similarly, open communication between developer and practitioner in early pilot tests of materials is no guarantee that developers and users will come closer to seeing one another's point of view. Although it is not a sufficient condition for bringing developers and practitioners together in a mutually satisfactory relationship, recognition by developers of the desirability of accepting user opinions and judgments in product development enterprises (as well as the training of developers in the procedures for establishing such relationships) seems to be a necessary step.

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