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ABSTRACT This project was designed to meet the following two objectives: (1) to produce a manual for educational knowledge linking change agents, and (2) to develop plans and designs for the training of educational knowledge linking change agents. This final report of the project consists of three sections, as follows: Section I. History of the Project--Background and Rationale; How the Guide Was Created: Cycles of Development; and The Evolution of Change Agent Training Strategies and a Manual for Change Agent Training Design; Section II. Evaluation of the "Guide" (Prototype #2) by 115 Change Agents--The Reviewers; Responses to the Review Form (Appendix A: Letter of Invitation to Potential Reviewers of the "Guide" [Prototype #2]; Appendix B: Form for Background Information on Reviewers; Appendix C: Reviewer Questionnaire and Cover Letter); and Section III. Evaluation of CECAT Based on Post-Conference Reactions of Participants--Background Readings; Printed Conference Materials; Conference Activities; Post-Conference Action Possibilities; and Future Need of Conference Related Materials; and Appendix A: CECAT (Conference on Educational Change Agent Training) Evaluation Form. A bibliography is provided. (For related documents, see ED 056 256, 258, and 259.) (DB)			

FINAL REPORT
Contract No. OEC-0-8-080603-4535(010)

PREPARING KNOWLEDGE LINKING CHANGE
AGENTS IN EDUCATION:

A materials and training development project.

by

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ATTACHMENT #3: A Preliminary Version of a Manual on Educational Change Agent Training.	Bound Separately
ATTACHMENT #4: "Anatomy of a Communication Arc"	Bound Separately

OBJECTIVES

This project including amendments and extensions was designed to meet the following two summary objectives:

A. To Produce a Manual for Educational Knowledge Linking Change Agents

1. To prepare a useful reference manual on the dissemination and utilization process for the practicing knowledge linker in education, building on the literature review on dissemination and utilization entitled PLANNING FOR INNOVATION, ED #029171.
2. To compare alternative contents and formats for such a field manual on the criterion of perceived usefulness by linkers.
3. To make a full revision of the manual based on reviews by 100 representative linkers, this revision to include special introductory statements for administrators and other typical users and an extended presentation on the role of change agent.
4. To prepare checklist summaries of major components of the manual for future use as a workbook or as field instruments.

B. To Develop Plans and Designs for the Training of Educational Knowledge Linking Change Agents

1. To create an awareness and involvement in the problem of change agent training by relevant segments of the educational community.
2. To prepare alternative training designs for such change agents, specifying:
 - a. identification and recruitment of appropriate individuals for training,
 - b. training workshop design (materials, structure, staffing, funding),
 - c. support materials for continuing use by trained agents (manuals, instruments, readings, etc.),
 - d. follow-up consultation and evaluation activities and personnel required to staff a total on-going program.

Most of the resources of the project were assigned to these two major tasks (A and B), but the project also called for some support of further refinement of utilization theory along the lines of the "linkage model" proposed by Havelock in his previous report: PLANNING FOR INNOVATION.

ACHIEVEMENT OF OBJECTIVES

A. The Manual

A manual of over 200 pages has been produced according to the process specified in the proposal. An early draft version (prototype #1) was evaluated intensively by a small group of representative change agents. As a result of this collaboration a second working draft (prototype #2) was produced including case studies from these change agents. Prototype #2 was reviewed intensively and evaluated by 115 educators chosen systematically to represent gerotypical future users of the manual. The response was overwhelmingly favorable and in addition provided a quantity of information which could be used for developing a third revision (prototype #3).

Subsequently the manual, under the title "A Guide to Innovation in Education" has been distributed by The Institute for Social Research on a limited basis under a developmental copyright from USOE so that it could be sold at cost and used in a number of university courses, in-service workshops, and conferences. The feedback from this controlled dissemination has indicated that the "Guide" can be an important tool in training and in program management in a variety of educational practice settings.

The "Guide" has now been further revised in accordance with objective A-3 to include a brief introduction for administrators and a greatly expanded section explaining the concept of "resource linker" and two other alternative change agent concepts, the "catalyst" and the "solution giver." Additional sections are now being written and all three appendices revised and up-dated using non-federal funds in preparation for final publication. Negotiations are under way with Educational Technology Publications, Inc. which has expressed a desire to publish the final version.

Checklists have been prepared for key portions of the text in accordance with objective A-4. However, these instruments have not yet been field tested so that their utility is still a matter of conjecture. It is anticipated that before such materials can be used as reliable tools of change planning, they will require several cycles of development parallel to that of the "Guide."

B. Training Designs

On May 25 to 27, 1970, 51 nationally recognized leaders in the field of change agent training were brought together at Clinton, Michigan to discuss the critical issues relevant to the content and procedures for such training. The conference, itself, was an intensive learning experience for those involved and represented a major dissemination thrust for the "Guide" and for the need for new resource linking change agent roles. However, the conference also produced a number of specific, through tentative, training designs for different conceptions of the role. These are incorporated as Part V of the manual described below

The primary products relevant to the achievement of objective B-2 have been assembled in the form of a manual for training program developers. This manual includes sections on knowledge content to be trained, goals of training, principles of training, an eight-part systematic framework for designing comprehensive programs, and several presentations of alternative training models

Section I: HISTORY OF THE PROJECT

A. Background and Rationale*

The 1960's saw the emergence of a new awareness that research by itself does not provide direct answers to the problems faced in the practical world, and this awareness has been articulated in the formation of a new discipline focussed on the problem of knowledge dissemination and utilization. Research studies of the dissemination-utilization process were virtually non-existent prior to World War II and were restricted largely to the area of agricultural innovations until a decade ago. Increasingly in recent years, however, there has been evidenced a dramatic growth of interest in this topic in such fields as public health, mental health, medicine, international development, and in particular, education.

Together with this growing interest in dissemination and utilization as a research concern have come increasing efforts to establish dissemination networks, new roles, and institutions designed specifically to speed the flow of knowledge from research to practice. U.S. education has been in the forefront of this innovative trend. Starting with major federal legislation on education in the early 1960's, there has been a very rapid growth of research and development centers, information clearinghouses, regional laboratories and locally based and regionally based dissemination projects, conferences, and training programs, all geared generally to the same end of up-grading education by infusing in the practicing school system new ideas and innovations based on research knowledge.

This proliferation of institutional forms has been so rapid that in nearly all cases it has preceded the development of adequate role definitions and adequate training and support activities and materials for these new roles. Practically overnight, thousands of *new knowledge linking roles* (disseminators, consultants, demonstrators, etc) have been created and filled by people who have only a vague conception of what the role is and no real way of preparing themselves and supplying themselves with the appropriate knowledge and materials for occupying the role.

Major contributions toward defining and publicizing the need for the linker role in education were made by Clark and Hopkins (1966 a & b) when they developed a taxonomy of linkage roles as a part of their study of "Roles for Research, Development and Diffusion Personnel in Education." They saw specialized diffusion roles as an essential accompaniment to the roles related to research and development in education and further study convinced them that the demand for persons to fill these roles would be tremendous in the not-so-distant future.

The institutionalization of linking roles in education is urgently needed to satisfy this growing demand and to assist in coordinating linking functions so that role overload and marginality, current major causes of linking failure, do not become totally nullifying forces in knowledge diffusion in education. The primary considerations for establishing and training personnel in linking roles are outlined by Havelock, et al (1969, Chapter 7).

*Much of this material is adapted from the original proposal statement.

To provide adequate support for these emerging linking roles in education, the educational establishment will have to provide training courses and field handbooks and manuals not only in specific content areas such as reading, guidance, administration, and curriculum but also in the general processes of disseminating and installing innovations, planning of change, and facilitating the flow of knowledge from research to practice. This project was intended as one contribution to this difficult but essential process. Building on an extensive review of the dissemination and utilization literature (Havelock, et al, 1969), we set out to create a field manual for the practicing knowledge linker in education. It was felt, however, that such a document would be successful only if it were developed collaboratively with a representative sample of these linking agents. Later phases of the project would be concerned with further revision and extension of the field manual and the establishment of training programs to familiarize linkers with its contents and potential uses. It was felt that through such programs some strong new role images would come into being through educators who were beginning to develop an identity and a defined area of expertise as resource linkers.

B. How the Guide was Created: Cycles of Development

1. *Review of Past Efforts and Development of a Proposal*

This project began with a need expressed by the Office of Education for a companion work to the extensive compendium and analysis of findings on dissemination and utilization (Havelock, et al, 1969). While this work was still in progress it was already obvious that its primary audiences would be researchers and policy planners who had the sophistication, patience, and motivation to derive their own implications. What about the busy administrator or practitioner who needed practical help on knowledge retrieval and utilization? Was it not possible to develop some practical guide for this broader and less research-oriented audience so that the substantial existing research and theory in this area could be put to more immediate practical use?

A first step was to look for models of such an effort. Had anyone tried to do this before and how well had they succeeded? In 1958, Lippitt, Watson, and Westley had published a volume entitled The Dynamics of Planned Change. This book was well written, summarized a good deal of existing research, and was directed broadly at practitioners of change. However, it was still largely theoretical-analytical in approach; it did not draw specific implications for specific situations; it contained few clearly specified "do's" and "don'ts"; it was in no sense a "how to" manual. Furthermore, The Dynamics of Planned Change was not systematically evaluated by any group of change agents for its utility or effectiveness before final dissemination. A more recent effort by Thomas E. Woods, The Administration of Educational Innovation (1967) does a fine and concise job of summarizing the rich literature on the diffusion of innovations (touched only lightly by Lippitt, et al) providing it in pamphlet size in the language that a busy practitioner might understand and absorb. But Woods' effort likewise was not tried out and evaluated on a practitioner audience and probably does not have enough depth to be considered a manual on change.

proposed by self-selected subgroups at the Michigan conference. Finally, the manual includes a fully developed outline for training state agency change agents. Plans for publication and distribution of this manual on training have not been fully formulated but it is expected that further revisions will be made using non-federal funds and that the Institute for Social Research publications office will make the document widely available.

CONTENTS OF THIS REPORT

This final report consists of three sections and four attachments as follows:

Section I *Narrative History of the Project* including development cycles of the "Guide," design, conduct, and outcomes of the Michigan Conference on Educational Change Agent Training (CECAT) and subsequent dissemination and training activities.

Section II *Evaluation of the Guide (Prototype #2) by LLS change agents:* a summary report based on returned data.

Section III *Evaluation of CECAT* based on post-conference reactions of participants.

Attachment: #1 *A Guide to Innovation in Education (Prototype #3)* plus revised and expanded introductory section.

Attachment: #2 Checklists on Change Process intended to accompany the "Guide."

Attachment: #3 A Preliminary Version of a Manual on Educational Change Agent Training.

Attachment: #4 "Anatomy of a Communication Arc": a sample of work partially supported under this contract to spell out theory of utilization in more precise terms. This work is still in progress.

In searching for projects which tried to develop information products according to a systematic evaluation and development plan we came across a study of the comparative effectiveness of several kinds of communication media, done in the field of vocational rehabilitation (Glaser, 1967). A single message about an effective innovation was transmitted by different media to several matched audiences and their adoptive behavior was compared. Glaser found that the written communication alone was sufficient for diffusing knowledge of the innovation, but that the addition of a demonstration conference or consulting activities significantly increased its actual adoption. The key variable here was the opportunity for the receiver to give feedback to the sender about his evaluation of the new idea in terms of his own experience. These results suggested that various mechanisms, conferences, interviews, evaluation forms, and consultations might be needed (a) to develop a product that was meaningful and useful to the intended audience, and (b) to diffuse the product once it was developed.

Although the use of a training package for disseminating experimentally-based or innovative programs to practitioners is common, as are studies of their effectiveness, their diffusion potential is limited because these programs have generally dealt with specific innovations, have been developed in response to requests from specific audiences, and have been designed to solve the unique problems of their respective situations. Such was the purpose of the social science curriculum development studies of Lippitt and Fox (1964). The same limitations apply in lesser degree to Richland's "traveling seminar" (1965) for educational innovation diffusion. Although such programs and packages are invariably reported as "successful," each faced anew the problems of entry, resistance, and linkage training with its respective audiences. Moreover, even having solved these problems for themselves, they do not contribute very much to our general knowledge on linkage problems in education. Their techniques for dealing with these problems are not readily generalizable to other audiences or to the same audience under different conditions because the techniques of entry, linkage training, etc. have not been clearly differentiated from the innovation itself.

Also, as these examples illustrate, much of the existing research had as its primary audience that group of practitioners who are most directly involved with the consumer (student, patient, etc.). These people are rarely in a position to assume the role of knowledge linkers to other practitioners. They may or may not have the administrative authority to act as a linker or change agent in their system, but if they are directly involved with the consumer they will have little time or energy to devote to linking activities after coping with the more salient--and urgent--daily problems in their own consumer system.

One attempt to overcome these limitations and to establish linking functions and roles as a permanent aspect of a school system was reported by Shaevitz and Barr (1968) in A Training Program for Research Utilizers: Philosophy, Goals and Methods. Their simultaneous "microaction" and "macroaction" research directed training in change processes at classroom teachers and principals and at people who had cross-building responsibilities within the school system. However, a lack of user

sophistication and an unfortunate lack of involvement on the part of the participants motivated the research team to turn from general issues of change processes to the solution, through change, of specific existing problems in the system. Thus, the future linkage potential of these two groups remains unexamined.

Another important contribution to our early planning for this project was the work of the Communication Program of the Far West Laboratory for Educational Research and Development directed by Dr. Paul Hood. We were especially impressed by the systematic development and evaluation process employed by that program in the evolution of educational products, and we made a conscious effort to adapt their approach in our own planning.

On the whole, past research seemed to say exceedingly little about the effectiveness of specialized communications of the type envisaged in this project. On the other hand, there was some reason to believe from numerous studies and observations of knowledge linking roles in various other fields that the development of viable knowledge-linking roles in education would be significantly aided by the simultaneous development of training programs, handy reference tools, and other software supports at least on a par with those now possessed by the county extension agent in agriculture. They also suggested the need for a development strategy which included features such as:

- (1) participation by the audience in product planning,
- (2) systematic evaluation, and
- (3) planned diffusion including user training and follow-up.

With these ideas in mind the Michigan team developed a proposal to USOE for a manual incorporating features (1) and (2) with the expectation that feature (3) would be added at a later date if the early work was successful.

2. *Literature Review and Annotated Bibliography*

After funding, the project staff began by making a thorough search for major works on change in education, updating the search effort of two years earlier which had led to the comprehensive literature review. This time, however, we were especially on the look-out for literature on change which was practitioner-oriented and in which derivations of implications for practice were spelled out.

From this literature review the staff* developed the first product of the project, an annotated bibliography of "Major Works on Change in Education" with a detailed subject index. The subject index was later valuable as a key to specific points and quotations which we wanted to include in the "Guide." It was also anticipated that this bibliography

*Havelock laid out the overall plan and took part in editing and screening while the annotations and indices were developed by Huber and Zimmerman.

would be a useful appendix for the "Guide," itself, and for that reason we used the following criteria for choosing works to be cited:

- (1) General coverage of a range of topics relevant to educational change.
- (2) In book form.
- (3) Published and available in education libraries, book stores, or by ordering from indicated sources.

For the most part we excluded empirical studies and reports on specific research projects unless they covered a range of relevant topics, offered both research findings and implications for practice, and could be obtained as separate monographs.

Copies of the bibliography were printed and distributed both by the University of Michigan's Institute for Social Research and by the Northwest Regional Educational Laboratory.* Included was a sheet entitled "feedback to authors" which asked readers to voluntarily indicate how they had used the bibliography and how useful it had been. Although this device induced only a trickle of responses (they are still coming in) there seemed to be a generally favorable response.

3. *Choosing a Structure for the "Guide"*

There were several alternatives available to us in structuring the "Guide," and because of the potential importance for later utility and acceptance by practitioners, we were anxious to explore a number of them before arriving at any conclusions. At least six possibilities presented themselves:

- (1) An encyclopaedic compendium of facts about change process, written in a simple style with practical implications, spelled out and arranged as alphabetical entries of any length from a short paragraph to 2 or 3 pages, thoroughly cross indexed.

Pros: relatively easy and straight forward to create, a good reference for specific user needs, maximum user selectivity allowed.

Cons: expensive to produce if done well (it would be very large), hard to disseminate, very low user involvement (impossible to read cover-to-cover), difficult to use in a training program or in a course.

In neither case were federal funds from this project used for dissemination.

Cons: it would be difficult to present a coherent overview or systematic topic coverage. Most of what is written, even if it is very well written, is not practitioner-oriented and does not go far in spelling out the "how to's."

- (6) Problem solving stages: this is the approach used by Lippitt, Watson and Westley (1958).

Pros: from our reading of the limited research literature on the change agent, this approach seems closest to the way he organizes his life and work. It allows systematic and logically ordered topic coverage and is especially suited to the "how to" style of presentation. It is also fairly involving and can be presented in parallel with actual case materials. It is also handy as a basis for simulations.

Cons: there is little agreement among experts on either the numbering or the ordering of such "stages"; moreover it may be more difficult in this approach to pick up the change agent "where he's at." This framework might be seen by some as too rigid and arbitrary to apply to the myriad of situations the change agent might find himself in.

After some discussions with other CRUSK staff experienced as change agents and change agent trainers (e.g., Ronald Lippitt, Robert Fox, Mark Chesler, and Lucille Schalble) and some intensive field interviews with educational change agents in Michigan (in the state department, at the University, and in three school districts), two facts became evident: (a) that the problem solver and the casebook approaches were both the most user-oriented and (b) that it is very difficult to elicit meaningful reactions to the idea of a product when the reactors don't have a model of the "real thing" in front of them.

Weighing these alternatives and facts, we chose the problem solver stages approach as our primary structure for developing a first prototype with the added notion that various appendices (such as the annotated bibliography) and a subject index could enhance its value as a reference work, and that a series of case studies would increase and enhance its value as a readable and involving book.

4. *Exploratory Field Interviews*

The exploratory field interviews were especially important in giving us a picture of the "life space" of the people who are now operating as educational change agents. It was obvious that most of these people are not theorists or even grand strategists, that what they know about the change process is not very systematically organized and only loosely articulated, that they think in terms of specific projects on which they are working, and that their thinking runs in a kind of a chronological order as they talk about their work. It was evident that if we were

- (2) A systems analytic framework such as Stufflebeam's "Context-Input-Process-Product" (1970).

Pros: would allow a systematic coverage of most topics in a logical order. This would make the book most useful to policy and program planners especially if they had engineering backgrounds. Increasing numbers of educators are becoming familiar with this approach to conceptualizing and ordering the facts about complex topics.

Cons: may not do justice to some of the social and psychological realities which the change agent must contend with. Moreover it is still foreign territory to many educators and enemy territory to some.

- (3) A communication model approach (i.e., "Who says or does what to whom by what channel to what effect.") such as used by Hovland (1954), Rogers (1962) and Havelock (1969) in his comprehensive literature review.

Pros: also allows systematic and comprehensive coverage including the human and social variables. Furthermore since the prime sources are already organized this way the task of retrieval would be greatly simplified.

Cons: has tended to be a researcher's or theorist model rather than a practitioner's.

- (4) A casebook with annotations for each case referencing the research literature.

Pros: this would involve the reader and would be especially helpful to those who find themselves in similar situations to one or more of the cases. It would also be an extremely helpful adjunct to training.

Cons: it would be very difficult to teach much substance of the research or theory of change in this manner and it would be very difficult to compose in the first place. There is also a paucity of good, clearly written case materials showing a range of the "do's" and "don'ts" of innovation management.

- (5) An anthology of the best writings available.

Pros: It would be relatively easy to construct such a document. The bibliography previously described lists several such works and a selection of the choicest pieces from each would be a simple matter. We could also guarantee that the writing would be first class, the coverage broad; and the points of view varied.

to be truly collaborative we would first have to give these change agents a chance to tell their war stories in gory detail and we would have to listen carefully to show them how their experiences and the research on the change process matched up.

Originally a conference had been planned to attract twenty or more educators representing change agents in at least four categories:

- (a) State Department of Education personnel who are engaged in disseminating new knowledge to school systems.
- (b) Directors of knowledge utilization and demonstration projects under Title III of the Elementary and Secondary Education Act.
- (c) Dissemination staff members from the Regional Educational Laboratories.
- (d) Professors in schools of education.

However because of our budget constraints and the increasingly evident need to work in depth with those who we contacted, we decided to limit the first conference to five articulate and representative change agents who would be willing and able to (a) read our materials critically and thoroughly, and (b) provide us with descriptions of their work which could be developed into cases for inclusion in the "Guide."

5. *The Knowledge Linkers Workshop*

During the fall of 1968 and the early winter of 1969, the project staff worked to develop a first prototype of the "Guide" based on the problem solving structure in preparation for the first evaluation by the change agents and a representative of the USOE (Mr. Richard Elmendorf). By February 15, each participant was mailed a rudimentary draft version including drafts of the introduction, Chapter 1 "Establishing the Knowledge Linker Role," Chapter 2 "Diagnosing the Problem in the Client System," Chapter 3 on "Retrieving Relevant Knowledge," an appendix to Chapter 3 on available information resources, Chapter 4 "Selecting the Innovation," and the annotated bibliography.

The conference was convened on March 15, 1969. By prior arrangement each participant began by relating a case of attempted innovation from his work experience. The case could be either successful or unsuccessful but in either case it should be the one he knew most about and the one that seemed to him to illustrate the most about the change process. After each presentation the project staff would question the presenter and suggest how his narrative could be fitted to a problem solving stages model of change.

Part of the afternoon session was reserved for comments and reactions to the drafts of "Prototype #1." The introduction and the overall plan for the "Guide" were received favorably as were the two appendices, but all the participants found the writing style difficult and the layout of chapters cumbersome and rather overwhelming in detail. It was clear that

a more polished product was needed in a simplified writing style with a reduction of diagrams and "telegrams" and an increase in narrative prose and quotations.

On the whole, the conference was very successful even if it contained some bad news for the development team. The case presentations were interesting, rich in detail, and right on target as potential case materials for the "Guide." The feedback on the prototype also provided explicit guidance for further development and support for overall direction.

6. *Creation of Prototype #2*

The first and most important task following the March conference was writing and rewriting of the main context of the "Guide." Havelock assumed primary duties for this part of the project, receiving editorial help and criticism from Douglas Truax and Joyce Kornbluh. The introduction and first chapters were written and rewritten several times until the whole staff felt the proper tone and flow were achieved. Once the style had been set and practiced for a while the writing became much easier.

Parallel to this activity the project staff was developing case studies based on the presentations at the conference. Four of the five presentations were judged to contain enough detail to merit inclusion in the "Guide" but they required extensive editing and rewriting before they were suitable for publication. Part of this editing process consisted of adding steps that might have or should have taken place but were not stated clearly by the presenter. This fictionalization was minor but was deemed desirable for the sake of readability. However, it may have resulted in distortions such that some cases (e.g., "Mike") sounded more organized and more successful than they actually were while others (e.g., "Steve") sounded less so. There was considerable disagreement among the staff over the wisdom of presenting cases which were not absolutely faithful to reality as spoken by the change agents. However, 115 change agents who later evaluated the "Guide" rated all the cases as "typical" or "very typical" in their experience. **

Considerable time and thought were devoted during this period to providing an interesting and readable format for the main text. In prototype #1 we had provided a text with many headings and an elaborate paragraph numbering system, interspaced at frequent intervals with quotes from other sources. Our conferees felt that this approach chopped up the text and made the flow of thought very hard to follow. On the other hand they enjoyed the quotes which were on target.

The solution seemed to be a two column format with the text flowing down the left column and the right either clear for individual note-taking or providing space for quotes where appropriate. Standard reference footnotes were relegated to the back of the book and the numbering system disappeared entirely. Another change was the addition in the right hand column of references to case study material whenever a point in the text could be illustrated by what did or did not happen in one of the cases.

*The fifth case was the last presented and suffered from time limitations; there was little time left for staff questioning and clarification after the initial presentation.

**See Section 11 of the report for presentation of this data.

The "Guide" as it was developed during this phase of the project had six components:

- (1) The introduction which explained the purpose of the "Guide," suggested three alternative role models for the change agent and a brief analysis of six process stages ("building a relationship," "diagnosis," "retrieving resources," "choosing solutions," "gaining acceptance," and "stabilization and self-renewal.")
- (2) The four case studies.
- (3) The text of six chapters, each representing a "stage."
- (4) An alphabetical listing of specific "strategies" of change.
- (5) An index of information sources in education (intended as a supplement to stage 3).
- (6) The annotated bibliography.

The fourth part (strategies) was derived from a CRUSK working paper by Havelock entitled "Innovations in Education: Strategies and Tactics." This listing was added as a compromise with the encyclopaedic approach mentioned earlier.

As finally assembled, prototype #2, represented a combination of approaches intended to appeal to users with a variety of information acquisition habits. The first three parts could be read in succession; the last three parts could be used for a variety of reference purposes. A reader could also browse or skim with the aid of charts, a clear outline and headings and many quotes from the leading authors in the field.

We were concerned, of course, that all these elements might represent too much for a manual of this kind but it did provide readers with many alternatives, and with a thorough evaluation planned, we felt that it would be best to let readers decide what should stay and what should go.

7. Review by a National Cross-Section of Educators in Typical Change Agent Roles

By the fall of 1969 we felt we had a product worthy of field evaluation. As called for in the proposal, reactions were solicited from four groups of educators thought to be typical of those now operating as "change agents" within the U.S. educational complex. The sample chosen was not intended to be representative of the nation's educational linkers in any strict statistical sense, nor were the four populations from which they were drawn exhaustive of possible linking role positions in the national educational establishment. However, each of the populations chosen had certain distinctive features which made them significant audiences against whose judgment the utility of the

manual should be measured. The significance of each group is specified briefly below:

(1) State Department Personnel:

Every state employs a number of professional educators (ranging from about 10 in the smallest states to about 200 in New York and California) as consultants, coordinators, and disseminators in various specific subject matter areas typically under major divisions identified as "administrative services," "instruction," and "vocational education." Whether or not such professional staff serve as knowledge linkers is not entirely clear. However, such persons are strategically located and formally charged with duties which bring them into frequent contact with practitioners (administrators, teachers, and others) under circumstances where they may be seen as knowledge linkers.

State Department personnel are also significant as a potential audience because of the probable increased reliance upon the states for the administration of federal dissemination programs over the next few years.

(2) ISEA Title III Directors:

This title provides funding for locally originated projects to diffuse innovations and facilitate the innovative process at the school system level. With fiscal year, 1966, the federal government started funding 1,000 such projects across the country. Directors of such projects are change agents or administrators of innovation activities more or less by definition. Hence, they represent a large and rapidly growing new audience for knowledge about the utilization process. Study of this audience and its reactions to the manual might give some indication of the relative merits of installing and supporting knowledge linkers on the local school system level in contrast to state, regional or federal level. An estimated 1,500 individuals belonged to this population at the time the project began.

(3) Regional Educational Laboratory Dissemination Staff:

The REL's were established with the specific mission of development and dissemination of educational innovations. Although they varied greatly in size and emphasis, the 20 REL's then in existence represented an important emerging force in the educational establishment. They were staffed by young, eager and often highly skilled professionals dedicated to educational change. Thus, although the number of individual diffusion personnel (including those involved in demonstration and field consultation activities) was small (approximately 200 individuals at that time) it was proportionally large within the REL's. In addition the REL's deserve close watching as potential loci for a vastly expanded federal effort in which an equivalent

of the present diffusion network in agriculture (the Cooperative Extension Service) would be installed in the field of education.

(4) Professors of Education:

There are an estimated 50,000 professors of education teaching in the 1,500 degree-conferring institutions of higher learning in the United States. Although it is presumed that few from this group would identify themselves as "knowledge linkers" or "change agents," they represent the largest clearly identifiable pool from which such persons are likely to emerge. In selecting a sample from this group for evaluating the manual, we were guided by such additional criteria as: some amount of extension teaching, involvement in consulting activities off-campus, and membership or training experiences with such groups as the National Training Laboratories of NEA.

In accordance with the plan set out in the original proposal prospective respondents were chosen at random from available lists and were sent a letter and a brief form explaining the project, asking for them to spell out their current role and soliciting their consent to be reviewers of the manual in exchange for receiving a complimentary copy of the final product.

The response to the commitment request letter was very encouraging (151 out of 200 or 75.5% accepted). Of these 115 later returned completed review forms (75.6%).

Although the detailed results of this review process are presented in Section II of this report, their import can be summarized briefly. The review process was successful on three counts:

- (1) It elicited a high rate of return.
- (2) Reactions to the "Guide" as a whole and to all major sections was overwhelmingly positive.
- (3) The reviewers provided us with extensive and detailed information for the development of a third and significantly improved version (prototype #3).

8. *Creation of Prototype #3*

With additional support from the U.S. Office of Education we were able to use the feedback from the reviews to formulate another revision of the "Guide" in the winter of 1970. The principal changes made were as follows:

- (1) Complete rewrite (for about the tenth time) of the introduction.

- (2) Complete recomposition and rewrite of Stage III ("Acquiring Resources").
- (3) Introductions and "editorials" on each case study.
- (4) Updating the appendix of information sources (the obsolescence rate for this index is extremely high).
- (5) Minor changes in the other "stages."
- (6) The inclusion of many more references to the case studies in the right hand column of the text.

Each of these revisions was based directly on feedback from reviews.

9. *Dissemination and Utilization of Prototype #3*

This third prototype version was considered sufficiently polished to merit limited distribution and utilization in some training workshops and conferences. Under a developmental copyright, the Institute printed and paper-bound 2,000 copies, recouping printing costs with a \$3.00 charge on each copy.*

In addition to individual users, the "Guide" became the basis for several in-service training workshops, conferences, and graduate seminars among which were the following:

- (1) The "Guide" formed the basis of a training institute for vocational education information specialists and program administrators held at Pittsburgh, Pennsylvania in May of 1970.** At this event, participants divided into four groups to simulate the development of a change project using each of the six stages.
- (2) The "Guide" was one of several background documents supplied to the Michigan conference on Educational Change Agent Training (CECAT), see Part C below for fuller discussion).

*No federal funds used for this purpose.

**One of seven institutes supported under a grant from the USOE to a consortium coordinated by North Carolina State University entitled "National In-Service Training Multiple Institutes for Vocational and Related Personnel in Rural Areas." The workshop in question was organized and directed by Dr. Douglas C. Towne of the University of Tennessee, now at the Northwest Regional Educational Laboratory, Portland, Oregon. The other workshops all received materials from the "Guide" (Introduction and Case Studies) but specific training activities were not based on them.

- (3) It was a key document in a training program sponsored by the Department of Health, Education, and Welfare, Social and Rehabilitation Service (HEW-SRS) to develop "Research Utilization Specialists" in the rehabilitation field.
- (4) In the summer of 1970 the "Guide" was used in conjunction with two pilot programs to train state agency linkage agents (Project SPREAD at Denver, Colorado and the Pilot State Program sponsored by the National Center for Educational Communication (NCEC) at the University of Missouri).
- (5) In the winter and spring of 1971 the "Guide" was used as the basis of graduate seminars at Michigan and at the University of Sussex in England. In these seminars graduate students worked on educational change projects which were analyzed systematically according to the six stages.
- (6) The Special Interest Group on Research Utilization of the American Educational Research Association held a three day workshop at the Educational Testing Service, Princeton, New Jersey in February of 1971 at which the "Guide" was one of the basic documents.
- (7) In June of 1971, the University of Wisconsin at Milwaukee held a 2 day in-service training workshop at which the "Guide" was the core document. In this seminar, participants clustered into eight groups. Two groups focussed on each of the four case studies, listing what should have and could have been done at each stage.

The above represents only a partial listing of the uses of the "Guide" to date that have come to the attention of the author. They suggest the range of uses of the "Guide" and its potential utility in the future as a field manual on change and as a basis for pre-service and in-service training of resource linkers and change agents in a variety of educational areas, roles, and levels.

10. *Further Revisions and Additions Under USOE Contract*

Although none were funded under this contract, most of the dissemination events listed above were evaluated and provided feedback of potential relevance for redevelopment of the "Guide" at some future date. Most of this feedback was extremely positive suggesting that the core document served its purpose more than adequately. However, there were certain changes and additions that might make it even more powerful and more relevant for a wider audience. Therefore in a contract supplement the USOE provided additional funds for the development of:

- (1) Checklist summaries of major points in each chapter.

- (2) An introductory section for administrators and at least one other specialized audience.
- and (3) A new section on establishing the role of change agent-knowledge linker.

Each of these additions was developed and written in the summer of 1971 and all are included in this report although none have been field tested for effectiveness.

The checklists, which are contained in "Attachment #2" below, still require and deserve considerable revision and evaluation. Ideally they should follow a development cycle parallel to the "Guide" itself.

It was decided that special introductions should be brief and fairly broadly targetted or else they would throw off our original change agent audience. The second introductory statement applies to "inside agents working from below" which we found to be the largest class of users and potential change agents on the educational scene, i.e., students and teachers *who want to change their own school*. These sections are incorporated in the "introduction" to the copy of the "Guide" presented in Attachment #1.

The new piece on the problem of establishing the role of linker has not been incorporated in the "Guide" as such (although the role description section has been expanded and revised). Rather it seemed appropriate to provide this material as part of the manual on training program design (Attachment #3) where it is incorporated as elements of Part IV, especially IV - 1, 2, 3, and 5. Considerations of role definition, development, and installation are thoroughly explored throughout the training design manual and specific alternatives are provided in Parts V and VI.

11. *Production and Publication of a Final Version*

* After two and one-half years of development and field evaluation, the "Guide" has been shaped into a potentially powerful tool for educational practice improvement. However, a good deal remains to be done to make it widely disseminable and usable through the remainder of this decade.

The author has immediate plans to revise and expand several parts including the introduction, Stage I, Stage VI and all the appendices. In particular Appendix B has proven extremely vulnerable to obsolescence and must be thoroughly overhauled. All these changes will be made by the author and they will lead to the publication of the "Guide" in the spring of 1972, probably by Educational Technology Publications, Inc.

*This will be done without the use of federal funds from this contract.

C. The Evolution of Change Agent Training Strategies and a Manual for Change Agent Training Design

1. *Background: The Need for Something Beyond the Guide*

The original proposal for this project was focussed exclusively on the development of a "Guide" to the process of knowledge utilization (in early draft titled "The Knowledge Linker's Handbook"). The "Guide" was to be targetted to a particular educational audience, those concerned with utilizing knowledge to introduce practice improvements at all levels and in all types of educational situations. However, from the beginning there was a problem in identifying who these people were by title and position. Up to now no one in education has carried the title of "change agent" or "resource linker," "utilization specialist" or "knowledge broker." Yet once the development cycle began and we started identifying individuals, interviewing them, and getting their inputs on the emerging "Guide," it became evident that, while such people do exist, they are (a) in very short supply, (b) know very little of the literature on change, and (c) fly by the seat of their pants in developing change strategies.

The "Guide" would be a help, provided the right people were aware of it, were motivated to read it, and had enough initiative to find ways of using it in their work. These were all big "ifs." Clearly something more substantial and intensive was needed if we were to move toward a really lasting, coherent, and professional concept of resource linker.

As with the development of the "Guide," itself, we decided to move forward in a collaborative and systematic way, this time involving the key national leaders who had had a hand in the training of various types of educational change agents or had a hand in administering organizations and programs in which such individuals would be working (e.g., State education agency staff).

The idea of a training program design as the appropriate next step in our program had roots in other events of the previous two years that are worth noting:

- (1) The need for the design of some sort of nation-wide program to diffuse current knowledge on utilization and planned innovation was discussed at length during the review conference of leading utilization scholars in Ann Arbor in February, 1968 (that meeting was sponsored by the Literature Review Project). At that time, Everett Rogers described the experience of the National Project for Agricultural Communications (NPAC) which was launched in the mid-fifties as a program to diffuse current knowledge about communication of innovations to agricultural change agents in all the states. There was consensus among the group that a similar program was needed now in education.
- (2) The same idea was proposed again to the Special Interest Group on Research Utilization of AERA at the annual meeting in Los Angeles in February, 1969, and strongly endorsed by most of those present.

- (3) Our experience in April, 1969, at the mini-conference of educational change agents to discuss the emerging handbook (see B-5 above) strongly indicated the need for some sort of training workshop as a necessary accompaniment to any written materials. The participants at this meeting were only able to identify themselves with the materials after they had had a chance to discuss the "agent" role concept in the context of their own work and to compare their experiences with others engaged in similar activities.

For these reasons a proposal to extend the project to include a conference to develop training program specifications was submitted and approved by the USOE; subsequently a second supplement was requested expanding on these ideas and calling for more extensive conference follow-up (in addition to "Guide" additions described earlier).

2. *Conference Planning*

As a first step in developing this part of the project a planning and steering committee was formed consisting of:

Ronald G. Havelock, Project Director
Henry H. Brickell of the Institute for Educational Development
Charles C. Jung of the Northwest Regional Educational Laboratory
Thomas C. Clemens of the U.S. Office of Education

This group represented a range of backgrounds and points of view with a common central concern for the training of specialists in resource utilization.

The committee had these concerns: (a) to design an event that would be involving, informative, and productive: i.e., we had to attract the very best people in the field, we had to teach them what we had in mind as "resource linking change agency," and we had to get them to work together to produce some training designs. (b) to choose a list of potential participants and a procedure for recruiting them.

To speak to the first concern, it appeared that the conference, itself, should be designed to have three phases: (1) input (to familiarize or remind participants of existing state-of-the-art knowledge about change process), (2) discussion (to analyze the problem of training and to derive implications from research literature relevant to change agent training), and (3) output (to work together in teams to put together actual training designs based on (1) and (2)).

To reinforce the input phase it was decided to provide all conferees with advance written materials and to ask for extensive prior reading and thinking on the content represented in these materials. By this means, hopefully, all participants would arrive with some common knowledge in their heads, some shared expectations, and a specific expectation that they could and would contribute to the proceedings.

Choosing and recruiting participants was also a crucial task. We had to have people who (a) represented the highest levels of sophistication and understanding of change processes from a variety of perspectives, (b) had long experience and know-how in the art and science of training, per se, (c) understood the complexities of the educational settings in which trainees would be working, and (d) had the national recognition and respect as leaders and experts to give the conference and its outputs maximum visibility.

To meet these objectives at least seven constituencies had to be represented in some degree:

- (1) prominent researchers on educational innovation process,
- (2) U.S. Office of Education: research training, planning, dissemination,
- (3) state education agency officials,
- (4) school of education deans,
- (5) superintendents or program directors for school districts or exemplary programs,
- (6) private enterprise, publishers, etc.,
- (7) Regional Educational Laboratory and R&D Center directors and staff especially concerned with dissemination and change.

Under these seven headings the committee drew up a list of over 150 names. From this list a smaller number (8-10 in each category) were selected as the persons to be reached in the first wave of invitations.

Because of the prominence and expertise of the chosen group, it was decided that further inducement in the form of travel and living costs should be offered. A grant of \$2,000 was provided by the Center for Research on the Utilization of Scientific Knowledge from its Kellogg Foundation grant to help defray these additional costs.

3. *Recruitment*

Six key experts were contacted by phone approximately five months before the tentative date set for the conference. Because the participation of these persons was deemed essential, it was felt that their schedule should be checked first and commitments obtained. The fact of their agreement to participate would also be a draw to some of the others we would contact later.

A letter of invitation was composed explaining the nature of the conference, objectives, time, place, etc. This letter was very carefully prepared, checked out with steering committee members and several others,* and rewritten several times. A copy of the letter is reproduced on the following page.

*Arthur Chikering was particularly helpful as an advisor on the tone and content of this letter.

ISR

CENTER FOR RESEARCH ON UTILIZATION OF SCIENTIFIC KNOWLEDGE / INSTITUTE FOR SOCIAL RESEARCH / THE UNIVERSITY OF MICHIGAN

ANN ARBOR, MICHIGAN 48106

February 5, 1970

I would like to invite you to join in a three day collaborative effort to put together guidelines for the training of educational change agents. The meeting will be held at High/Scope in Clinton, Michigan on May 25-27, 1970. We will address ourselves principally to three questions:

1. "What do we now know about the management of educational innovation?"
2. "How can this knowledge be effectively incorporated in the pre-service and in-service training of administrators and educational consultants?"
3. "How can we initiate programs to provide this type of training for the growing number of educators across the nation who need it and are asking for it?"

By bringing together a group of thirty recognized national leaders in administration, training, research and practice, I believe it will be possible to set down some guidelines and program alternatives which are truly creative and responsive to the need. Our work will result in a published document which should have considerable impact. There will be an immediate influence on training programs now in the works and a long range influence in guiding future program planning in this area.

The sessions will be designed to allow maximum contributions from each of us and a maximum opportunity to exchange ideas. Thanks to support from the U.S. Office of Education and the Kellogg Foundation we will be able to pay expenses and travel for all participants. Additional details are provided on the attached sheets. If you have any other questions on any of this, call me collect at (313) 764-2560. Please let me know by phone or return mail if you think you will be able to join us.

Yours sincerely,

Ronald G. Havelock
Chairman

RGH:rw

The basic information on plans for the conference was spelled out in a 3-page attachment which is partially reproduced below.

" PLANNING FOR EDUCATIONAL CHANGE AGENT TRAINING
A Working Conference
High/Scope, Clinton, Michigan
May 25-27, 1970

"Objective: To pool what we know about the management of educational innovation and to generate a set of guidelines for the training of administrators and consultants who have the responsibility for directing or advising innovation programs and projects at various levels. We want to think through the whole question of what is needed to train people to be more effective change agents. Additionally, we will be concerned with how we can plan a national program or programs in this area.

"Why the Conference is Needed and Why Now:

1. Previous reports calling for more change agents and disseminators have received considerable notice. A training design is the key implementation step for establishing such roles in large numbers.
2. We are now in a better position to formulate programs than we have ever been before because of the major reviews and summaries of existing knowledge on this subject that have appeared in the last few months.
3. The federal administration is now searching for new approaches to educational reform, and officials in the U.S. Office of Education have indicated a special interest in the problem of diffusion and utilization of educational innovations.

"Your Role: You will be a contributor and resource person from your experience and from the reading you have done. There are no set roles, no papers read; we will, however, furnish a number of background materials which should be read prior to your arrival. These will help us get into the substance of the meeting very quickly.

"Meeting Structure: We will subdivide into working groups of about 8 for most of the time. The meeting will be carefully planned so that we can wind up with a high quality product and at the same time so that each man will feel he is both learning and contributing in relevant ways.

This conference, itself, should be a model for working conferences of the future. To that end, we are going to put together a number of ideas about meeting structure and participation that have been used successfully in the recent past and we are going to experiment with some new approaches as well.

"How Will the Three Days be Used:

Day #1
Implications of
Research and Theory

We will spend the first day reviewing current research and theory on innovation, planned change and knowledge utilization in an effort to identify the essential facts that a change agent or an administrator with change agent responsibilities must know.

Day #2
Alternatives for
Ideal Training
Programs

On the second day, we will consider what we know about training and the manpower needs and resources both for trainers and trainees. By the end of this second day we should have identified a series of options or components for the ideal training program, pre-service and in-service.

Day #3
Implementation

On the final day, we will consider implementation possibilities and strategies. How to organize and fund a training program that will have national impact will be a major concern at this point. How can we get maximum utilization of what we have generated in these three days.

"Product: After the meeting, the training guidelines generated by the group will be written up, edited as a report for the U.S. Office of Education and for publication as a monograph. We are also planning to invite conferees to write brief position papers on certain critical issues as these may emerge from our discussions. These papers will then be edited and published as part of the report. Some additional funds are available for reimbursement to paper contributors."

The invitational letter and this advance descriptive material proved to be extremely effective as 56 of the original list of 75 invitees accepted outright! Of the remainder most called or sent courteous notes explaining their unavailability and regret at not being able to attend. This response left us with an embarrassment of riches. Since we had more acceptances than anticipated (a maximum of 50% positive response was expected) we had two problems, first to pay for the additional travel costs,* and second to design a meeting which could involve more attendees.

It was also pleasing to note that we had acceptances from people in each of the seven categories although as it later turned out, two chief state school officers (Massachusetts and Colorado) who had accepted were unable to attend. Altogether 50 of the 57 persons who accepted invitations participated in the conference.

*Again CRUSK helped us with some additional support from the Kellogg grant.

4. The Conference (CECAT)

On May 25, 1970 the "Conference on Educational Change Agent Training" (CECAT) began on schedule at a secluded conference center in a country setting* at Clinton in southeastern lower Michigan. Most participants arrived Sunday evening, May 24, for dinner and had an opportunity to get acquainted or reacquainted informally before the actual work of the meeting began.

Each participant had previously been mailed a number of materials including a paper by Goodwin Watson summarizing the research literature on research utilization,** Planning for Innovation by Havelock, et al, a 500 page work presenting a comprehensive summary of the literature on planned change, dissemination, and utilization as of 1969, the "Guide" (prototype #3) and another practitioner-oriented manual on the change process prepared by Everett Rogers and Lynn Svenning for "Operation PEP," a Title III project based in the San Mateo, California school district.

In addition each participant had been provided with an extensive reaction form covering the major findings reported in these readings. The form asked for their theoretical orientation, their judgment of the importance of various topics and their choice of a topic on which they could serve as a special informant and resource person to others at the conference. Nearly all participants had faithfully completed this form and returned it to us prior to May 20th so that we were able to collate responses and provide every member with a collective profile of knowledge levels, attitudes, and interests of those attending the meeting.

Charles Jung also prepared a list of generalizations on the training process derived from research findings. We hoped that participants would peruse these two documents fairly carefully to get a feel for what would be discussed the first two days.

After a brief orientation session on Monday morning the participants divided into six groups of about 8 members each; these groups were pre-selected to be more or less homogeneous on the basis of theoretical orientation and topic interest. They were each provided with a recording secretary and were asked to appoint a chairman to guide the discussion, to keep time so that each had a chance to make a presentation around one of the generalizations and to post the major points arising from the discussion for sharing with the other groups in the late afternoon.

*Actually, because of the number of participants and the small number of private rooms, many had to double and triple up. This caused considerable discomfort to some. The site chosen proved to be a significantly negative feature of the conference.

**Prepared for an NIMH contract to Edward Glaser and the Human Interaction Research Institute to prepare a manual on the use of research results in mental health.

Following this orientation, concerned participants were invited to post an idea for a change role or situation for which a training program of some kind was needed. The question of level was also left open. After these ideas were posted all the participants were asked to read them and to sign up under them if they wanted to participate in that task force. By this process seven task groups were formed ranging in size from two to seven members. In addition, four participants chose to work alone developing their own models.

The first task force sessions on Tuesday afternoon were intended to explore the role concept under consideration more fully and to answer the first question on the outline (role definition and rationale). Tuesday evening Havelock, Jung, and Clemens were to screen the preliminary task force outputs and provide feedback and comment on additional points and clarifications that should be made in the Wednesday morning discussions.

On Wednesday the first two hours were devoted to concluding the task force work. At 11:00 a.m. the task force reports were posted in the large meeting room and output of each task force was summarized by a spokesman. Reactions and clarifications from all participants were offered.

A final session of the conference dealt with next steps which might be taken to advance the training of change agents and reactions to this conference. This meeting was unfortunately too brief to reach much closure and was rated as less than completely satisfactory by those who were still present.

5. *Aftermath of the Conference*

At the close of the conference each member was presented with a long evaluation form which asked for ratings and reactions to each segment including advance materials, over-all design, group sessions, panel, informal discussions, and task force meetings. Forty-one responses were received representing about 90% of the participants who were able to stay with the conference for the three days, exclusive of the chairman and organizer. These responses are analyzed in Section III of this report.

Immediately after the conference Havelock set about preparing guidelines for a model training program for State Education Agency change specialists (Interim Report submitted June 30, 1970). In developing this plan, he reviewed the task force outputs and panel presentations, and followed a modified form of the task force structure (with an additional eighth element "utilization of evaluation"). However, it soon became evident that the rich and loosely structured output of the conference, though a good stimulus, had to be augmented considerably from other sources. This training model design is now incorporated as Part VI of the "Manual on Educational Change Agent Training" (Attachment #3 of this report).

The newsprint summaries of each group's discussion of the day were posted in the large meeting room and participants were encouraged to "walk around" to inspect and consider the points made by other groups.

On the evening of the first day, these same subgroups met once more, this time to consider the several additional topic items that participants had added to the list on the pre-conference feedback form. These "hot issues" discussions were undoubtedly a highlight of the conference for many participants as there was an opportunity to explore issues of great personal concern and currency with a distinguished group of colleagues. Some of these sessions continued well into the late evening hours.

The second day began with a panel discussion of training "experts" on issues particularly germane to training per se. Kenneth Benne, Matthew Miles, Lucille Schaible, Irving Millgate, Ronald Lippitt, Floyd Mann, and Max Goodson each made a brief presentation on training issues followed by a general discussion including all participants.

Following this general meeting a new set of subgroups was formed with each of the panel members as chairman of a group. The groups were intended to discuss and post key training issues using as resources (1) the Jung list of generalizations on training, and (2) the panel discussion.

It appeared in retrospect that the device of a "panel" was somewhat divisive since many other participants had expertise in this area and may have resented the apparent elevation of a few. Although the conference chairman (Jung) and the organizer (Havelock) thought the panel was very stimulating, it was not rated highly by most participants.

On Tuesday afternoon Jung and Havelock explained the nature of the task for the last day, to work in teams to develop training designs and in the process speak to seven questions:

- "(1) Define the change role, provide a rationale and state limiting assumptions.
- (2) Minimal preconditions for selection/training of trainers and trainees.
- (3) Maximal outputs from training:
 - ...attitude and value
 - ...knowledge
 - ...skills
- (4) Ways to provide required training (e.g., timing, scheduling, setting, types of materials, types of experiences).
- (5) How to set role in an institutional context.
- (6) Criteria for success in the role.
- (7) Evaluation process."

Starting in June of 1970, CRUSK staff and assistants including Joyce Kornbluh, Roberta McConochie and Mary Havelock began editing task force reports filling in gaps and composing prose drafts from the telegraph notes and outlines left by CECAT. This proved to be a very difficult and frustrating task. In some cases they were able to solicit revised copy from one or another of the contributors. In other cases an edited version was circulated among all contributors of that task force for comment. In still other cases editorial judgment indicated that the primary thoughts should be incorporated in other parts of the manual but that a "design" could not be reported as such. These judgments were especially agonizing because of the investment of effort and interest which the task forces represented to all concerned.

Recorders' notes from each of the Monday and Tuesday subgroup sessions were also edited and typed. This material is not included directly in this report but was used in preparing Parts I - IV of the Manual on Training.

The final task under this contract was intended to be the writing of alternative training designs based on the conference (CECAT). The State Agency design represented one effort in this direction. However, it became apparent after the conference (a) that there was a large variety of alternative concepts of change role and change process training and (b) that the conference, per se, did not provide enough detailed input for the full description of any one of them. Therefore the project director decided that the optimum product would be a manual on training design which would give a detailed analysis of the considerations, principles, and elements that should be incorporated in any such program regardless of level or specific focus. In addition this manual would include the State Agency model (the interim report of June 1970) as a fully developed example, and the most fully articulated task force reports as image-makers for would-be program developers in different areas.

Project director Havelock had other commitments in the fall and winter of 1970-71 which prevented him from following through on this "manual" concept. Kornbluh and others attempted to develop this product based on existing notes and outlines but they found that they did not have enough background to complete the job. The present manual (Attachment #3) was composed largely by Havelock in the summer of 1971.

6. *Plans for Final Production and Distribution of the Manual*

After this report is submitted to USOE, the manual will be further edited and refined so that it is suitable for publication.*

A limited edition will then be published probably before the end of 1971 and copies will be sent to CECAT participants as promised earlier. Large volume sales of this document are not anticipated although its utility to a specialized audience of trainers and training designers should be very high indeed. Publication will be by the Institute for Social Research publications division and no claim will be made for copyright at least over materials prepared for the USOE contract.

*This work will be undertaken without the use of Federal funds.

Section 11: EVALUATION OF THE "GUIDE" (PROTOTYPE #2) BY 115 CHANGE AGENTS*

A. The Reviewers

As described in Section I above, letters were sent out in the fall of 1969 to 200 educators in typical change agent roles asking if they would agree to review the "Guide" for us. This letter is reproduced as Appendix A to this section. Of the 200 educators whom we initially contacted 151 agreed to review the "Guide" and they returned to us a form giving a brief description of their professional activities. This form is reproduced as Appendix B of this section. When prototype #2 of the "Guide" was prepared we forwarded this to them together with an extensive review form, which is reproduced, along with its cover letter, as Appendix C to this section. This review form was actually completed and returned to us by 115 people, or 75.6% of those who had consented to review the "Guide."

We initially planned to draw our sample of reviewers from four areas which we felt were representative of typical potential users of the "Guide." These areas were: 1) State Department of Education personnel who act as consultants, coordinators and disseminators; 2) Directors of local innovation projects supported by ESEA Title III; 3) Regional Educational Laboratory dissemination staff; and 4) professors of education. We did carry out this plan but we also decided to include a sample of educators chosen from local school district personnel. We knew that our sample of Title III directors would give us some indication of how well the "Guide" would be received at the local level, but we also felt that these individuals are often engaged in fairly specialized programs of questionable permanence. We therefore decided that a sampling of local educators in general would give us a broader indication of the extent of the audience to which the "Guide" might appeal.

We wanted our reviewers to be representative of educators throughout the nation, so our initial letter asking change agents to review the "Guide" was sent out to educators in all 50 states and the District of Columbia. Since not all of those whom we initially contacted actually completed the review form, not every state was represented in the final sample. The sample was still widely representative, however, with the 115 reviewers coming from 37 states and the District of Columbia. Table 11.1 shows the national distribution by states of the reviewers in each of our five sub-groups.

[Insert Table 11.1 here]

The positions held by the reviewers were quite diverse, but a brief general characterization of those in each group may be made. There were a total of 41 reviewers in the State Department group, and of these, 19 were directors or coordinators of programs which ranged from vocational rehabilitation to statewide planning and dissemination. Ten were supervisors or superintendents of departments within the state departments of education, and eight were consultants or research utilization specialists. The four remaining members of this group were planners and project developers.

*This section was prepared by Mary C. Havelock.

By an overwhelming vote of 36 - 3 (with two abstentions) CECAT members expressed a desire to reconvene within a two year period. We have no current plans to do so but strongly recommend that USOE take further steps in this direction. CECAT was not in itself an unqualified success; it did not produce the kind of product with the detail and clarity we had hoped for, but it did demonstrate that there was a great interest in this area across the nation among educational leaders, and to some extent it indicated that there is a community of thought on what is needed. Another CECAT or series of CECATS (regional or topically focussed, perhaps) with adequate funding for advance preparation and follow up, would start a significant movement for educational reform in the United States.

TABLE II.1

National Representation in Sample of Reviewers

T = Total for State
S = State Department

L = Local
III = Title III Directors

R = Regional Labs
O = Other

State	T	S	III	R	L	O	State	T	S	III	R	L	O
Alabama	4	1	1	-	1	1	Montana	1	-	1	-	-	-
Alaska	0	-	-	-	-	-	Nebraska	1	-	1	-	-	-
Arizona	0	-	-	-	-	-	Nevada	1	-	-	-	1	-
Arkansas	0	-	-	-	-	-	New Hampshire	1	-	1	-	-	-
California	13	5	1	4	3	-	New Jersey	1	1	-	-	-	-
Colorado	1	1	-	-	-	-	New Mexico	2	-	-	2	-	-
Connecticut	1	-	1	-	-	-	New York	10	9	-	1	-	-
Delaware	1	-	-	1	-	-	North Carolina	5	-	2	-	2	1
Washington, D.C.	1	-	-	-	-	1	North Dakota	0	-	-	-	-	-
Florida	2	2	-	-	-	-	Ohio	1	-	1	-	-	-
Georgia	2	-	1	1	-	-	Oklahoma	0	-	-	-	-	-
Hawaii	0	-	-	-	-	-	Oregon	2	-	1	1	-	-
Idaho	0	-	-	-	-	-	Pennsylvania	7	-	3	2	-	2
Illinois	3	2	-	-	-	1	Rhode Island	1	-	1	-	-	-
Indiana	0	-	-	-	-	-	South Carolina	4	2	1	-	-	1
Iowa	3	-	1	-	2	-	South Dakota	6	6	-	-	-	-
Kansas	2	-	1	-	1	-	Tennessee	1	-	-	1	-	-
Kentucky	3	-	-	1	2	-	Texas	2	1	-	1	-	-
Louisiana	0	-	-	-	-	-	Utah	1	1	-	-	-	-
Maine	1	-	1	-	-	-	Vermont	0	-	-	-	-	-
Maryland	1	-	-	-	-	1	Virginia	3	-	-	-	2	1
Massachusetts	3	1	-	1	1	-	Washington	0	-	-	-	-	-
Michigan	14	6	1	1	4	2	West Virginia	0	-	-	-	-	-
Minnesota	3	1	-	1	1	-	Wisconsin	1	1	-	-	-	-
Mississippi	0	-	-	-	-	-	Wyoming	1	-	1	-	-	-
Missouri	5	1	-	3	1	-							
TOTAL								115	41	21	21	21	11

Our reviewers included 21 ESEA Title III directors, 14 of whom listed themselves as directors of special programs which ranged from curriculum research to in-service education. The remaining 7 members of this group were administrators, either school principals, superintendents or administrative assistants.

Of 21 reviewers from the Regional Educational Laboratories, one was a laboratory director and another was an assistant director. The group included 12 directors or coordinators of various programs such as individual learning and teacher training. The remaining seven reviewers in this group held a variety of positions, mainly as assistants to the professional staff of the laboratories.

Our sample of 21 local school educators included six superintendents of schools and three principals or vice-principals. Nine members of the group were directors of programs which typically served an entire school district; "Director of Research, Development and Planning" and "Director of Secondary Education" were typical job designations. One reviewer was an educational researcher and two were administrative assistants.

Our sample of professors of education was the smallest group, with only seven respondents in this category. Their areas of specialty ranged from community activities to educational research.

Four additional educators who reviewed the "Guide" could not readily be classified as belonging to one of our five respondent groups. These included a Program Manager for the Department of Health, Education and Welfare and a director of educational research and training. We combined the responses of these educators with those of the professors of education to make a total group of 11 respondents which we designate as "other" in reporting the responses to the review form.

We asked all our reviewers to indicate the activities in which they were involved as educators and change agents, either full or part time (see Appendix B of this section). Their responses to this question are presented in Table 11.2, which shows the percentage of each respondent group involved in each of 12 areas of professional activity.

[Insert Table 11.2 here]

All groups have a very high percentage of respondents engaged in administrative duties, with a total of 71.3% of all respondents spending at least part of their time in this area. Just as outstanding is the fact that apart from the "other" group, which includes the university professors, a very low percentage of respondents are engaged in teaching.

The balance of their time seems to be spent primarily in research, development, in-service education, and consultation, with some groups being quite involved in committee and task force work. They also have apparent high interest in maintaining professional relationships; 80% of respondents belong to at least one professional organization, and the average number of memberships for all reviewers is four. Judging from this profile I think we can conclude that these educators are indeed acting in typical change agent roles; they are interested in and have access to many sources of new ideas and they are engaged in many activities which would serve to bring their information to the attention of others.

TABLE 11.2

Professional Activities of Reviewers

	State Dept.	Title III	R.E.L.	Local	Other	All Groups Total
Number of Respondents	41	21	21	21	11	115
Average Age	45	47	38	42	44	43.5
Highest Academic Degree:						
Doctorate	50%	50%	63.2%	42.1%	80%	53.8%
Masters	50%	45%	26.3%	57.9%	20%	43.3%
Bachelors	0	5%	10.5%	0	0	2.9%
Professional Activities - Percent Responses:*						
Teaching	17.1	14.3	19.0	19.0	63.6	21.7
Special Services	26.8	28.6	19.0	4.8	9.1	20.0
Counselling	12.2	4.8	4.8	4.8	18.2	8.7
Administration	63.4	76.2	61.9	90.5	72.7	71.3
Research	63.4	52.4	81.0	38.1	63.6	60.0
Development	63.4	47.6	81.0	52.4	36.4	59.1
In-Service Education	48.8	42.9	42.9	28.6	72.7	45.2
Consultation	56.1	28.6	42.9	14.3	63.6	41.7
Title I - ESEA	4.9	28.6	4.8	33.3	18.2	15.7
Title III - ESEA	39.0	90.5**	9.5	0	9.1	33.0
Participation in committees, task force, etc.	39.0	47.6	23.8	14.3	63.6	36.5
Membership in Pro- fessional Organiza- tions	85.4	85.7	71.4	76.2	72.7	80.0

*Percents for each group do not total 100% because respondents could check more than one item.

**The percent of "Title III group" respondents who indicate they are involved in Title III programs does not total 100% because some respondents in that group had recently completed their Title III programs. We left them in this group since their responses to the handbook would still be representative of those of other Title III program directors.

TABLE 11.7

The Six Stage Model

	Percent Ratings						Mean Ratings*
	Very Clear	Mostly Clear	Adequately Clear	Somewhat Clear	Not at all Clear	Total	
Are the stages distinct steps in the process of innovation?	55.8	27.9	11.6	3.5	1.2	100	4.3
Are the stages divided into useful groupings for your change efforts?	Very Useful	Mostly Useful	Adequately Useful	Not too Useful	Not at all Useful	Total	Mean Ratings*
	34.5	33.3	24.0	8.3	0		
Are the individual stage materials useful - do they apply to your own work?*	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate	Total	Mean Ratings*
	54.3	27.6	11.7	5.1	1.2		

* 5 = "very clear"; "very useful"; "very good"

1 = "not at all clear"; "not at all useful"; "very inadequate"

**Responses to this question are given for each respondent group and each stage in Tables 11.8, 11.9 and 11.10.

The other two questions in Table 11.7 show an apparent discrepancy. The first of these questions on the usefulness of the six stages was asked relative to the six stage model. The second was asked with regard to the usefulness of each individual stage, with the responses to each of the six stages being combined in this Table. Evidently the reviewers found it easier to see the utility of each stage individually than to imagine themselves as approaching innovation in terms of a six stage process. Hence, it may be somewhat more difficult for change agents to accept the overall strategy suggested in the "Guide" than to adopt specific procedures and tactics related to the strategy.

Tables 11.8, 11.9, and 11.10 give detailed responses to the question on usefulness which was asked about each individual stage. The question was: "Usefulness: could you think of ways this stage applied to your own work?". Table 11.8 shows the mean ratings each respondent group gave to each stage.

"Does it serve to show who a 'change agent' is?" the reviewers rated it as 4.0 on a five point scale (with 5.0 representing "very good" and 1.0 representing "very inadequate"). On this same scale the question "Does it make the objectives of the handbook clear?" received a mean response rating of 4.1.

In order to aid us in the revision of the Introduction we asked several additional specific questions which received the following mean responses (again 5 represents "very good," 1 represents "very inadequate"):

writing style: 4.3
organization: 4.0
clarity of pictures and diagrams: 3.1
value of pictures and diagrams: 3.6

We felt that although the general reception of the Introduction was good, the responses nevertheless indicated some deficiencies. We therefore rewrote the Introduction, making a particular attempt to improve the pictures and diagrams.

2. *Evaluation of the Case Studies*

The rationale for inclusion of the case study materials was, of course, to give concrete examples which would serve to illustrate the material of the later chapters ("stages"). The case studies could be considered a success only if they adequately served this purpose. We therefore asked our reviewers whether they found the references to the case studies in the text of Part II to be useful. The response was gratifying; 80.0% of reviewers did feel they were useful. Another 9.4% felt they were not needed, while 10.6% found them to be either difficult to follow or distracting. Because of this very favorable response, we added more references to the case studies when we prepared Prototype #3 of the "Guide."

Table 11.4 shows responses of the reviewers to questions about the detail, length and number of case studies presented.

[Insert Table 11.4 here]

Clearly we hit it just right in terms of length and detail of the case study material. We seem to have about the right number as well, although 25.3% of reviewers would have liked to have more.

We were also interested in how relevant each individual case study might be to the experience of each group of respondents. Reviewers were asked to rate each case study on the basis of how typical it was of situations in which they themselves or someone they knew were involved. These responses are given in Table 11.5.

[Insert Table 11.5 here]

One additional fact might be noted; none of our sample of local school district personnel turned out to be engaged in ESEA Title III programs. Thus our judgment that Title III program directors would not necessarily represent a typical sample of educators at the local level seems to be correct.

B. Responses to the Review Form

There was no specific question on the review form asking the respondents to give an overall evaluation of the "Guide." Reviewers were asked about the extent of their interest in each individual section, however, and these responses are presented in Table 11.3.

TABLE 11.3 Overall Interest in the Handbook:
Percent Ratings

	<u>Very Good - Good</u> <u>Quite Interesting</u>	<u>Adequate</u> <u>Somewhat</u> <u>Interesting</u>	<u>Somewhat In-</u> <u>adequate - Very</u> <u>Inadequate</u> <u>Not Very</u> <u>Interesting</u>	Total
Introduction	75.3	18.0	6.7	100
Case Studies	60.7	35.9	3.4	100
Stages*	79.7	15.1	5.2	100
Total Handbook	76.4	18.4	5.1	100

*Ratings are given for each individual stage in Table 11.9.

The Introduction and each of the chapters on the six stages were rated on a 5-point scale from very good to very inadequate. The top two categories (very good and good) were combined in the above table, as were the lowest two categories (somewhat inadequate and very inadequate). The case studies were rated on a 3-point scale of "quite interesting," "somewhat interesting," and "not very interesting." We feel we made an error in judgment in asking for a rating on this particular scale since the words "somewhat" and "quite" do not convey precise levels of distinction.

Despite possible confusion on this score, however, we can still see clearly from Table 11.3 that the "Guide" as a whole was very favorably received, with 76.4% of all reviewers rating it as good or very good in interest.

1. *Evaluation of the Introduction*

In addition to asking the respondents to rate the Introduction on interest level, we asked questions which were designed to elicit the reviewers' judgments as to whether or not the Introduction was effective in fulfilling its objectives. In response to the question

TABLE 11.4

Case Study Detail, Length and Number:
Percent Ratings

	Too Detailed	Right Amount of Detail	Not Enough Detail	Total
Detail	8.1%	83.7%	8.1%	100%
	Too Long	Right Length	Too Short	Total
Length	10.5%	83.7%	5.8%	100%
	Too Many	Right Number	Too Few	Total
Number	1.2%	73.5%	25.3%	100%

TABLE 11.5

Typicality of Each Case Study:
Mean Rating* by Each Respondent Group

	Linda (Black Studies)	Mike (Sex Education)	Steve (Staff Development)	Henry (Social Studies Curriculum)	TOTAL
State Dept.	3.3	4.1	4.5	3.3	3.9
Title III	3.3	4.3	4.2	3.5	3.8
R.E.L.	3.2	4.3	3.7	3.8	3.8
Local	3.6	4.4	4.1	3.9	4.0
Other	3.8	4.3	4.7	3.6	4.1
Total- All Groups	3.4	4.3	4.2	3.6	3.9

* 5 = "very typical"; 1 = "not typical"

Though two of the case studies (Mike and Steve) were regarded as more typical than the others, the case studies as a whole were rated as quite typical. Over all, the selection of case studies had roughly equivalent appeal to each group of respondents, although certain case studies seemed to be considered especially typical by different groups. Each group rated at least one case study at least as high as 4.3; the case study materials seem to be representative of a wide variety of change situations in education.

In Table 11.6 we show the percentage of respondents who rated each of the case studies in each level of typicality. Even though the cases of Mike and Steve clearly led in ratings, this Table shows that a large portion of reviewers considered the cases of Linda and Henry as equally or more typical.

TABLE 11.6 Typicality of Each Case Study:
Percent Ratings by all Respondent Groups Combined

	Very Typical 5	4	3	2	Not at all Typical 1	TOTAL
Linda	23.3	24.4	27.9	16.3	8.1	100
Mike	60.2	17.0	13.6	6.8	2.3	100
Steve	48.3	33.3	12.6	4.6	1.1	100
Henry	21.2	43.5	16.5	10.6	8.2	100
TOTAL	36.4	29.5	17.6	9.6	4.9	100

3. *Evaluation of the Six Stages*

We were particularly concerned to find out whether the organization of the handbook around the concept of six "stages" of innovation would be judged as realistic and helpful by typical change agents. Responses to questions eliciting this information are presented in Table 11.7.

[Insert Table 11.7 here]

We were pleased to find that our reviewers did consider these "stages" to be clearly defined as distinct steps in the process of innovation; 83.7% felt that they were "mostly clear" or "very clear."

TABLE 11.8

Usefulness of the Six Stages:
Mean ratings* of each stage by each respondent group

Group	Relationship Building: Stage I	Diagnosis: Stage II	Acquiring Resources: Stage III	Choosing Solution: Stage IV	Gaining Acceptance: Stage V	Stabilizing: Stage VI	All Stages
State Dept.	4.5	4.3	4.1	4.5	4.6	4.4	4.4
Title III	4.7	4.2	4.0	4.5	4.2	4.0	4.2
R.E.L.	4.1	4.2	3.7	4.2	4.7	4.4	4.2
Local	4.2	4.4	3.9	4.1	4.2	4.5	4.2
Other	4.3	4.5	4.1	4.4	4.8	4.0	4.4
TOTAL	4.4	4.3	4.0	4.4	4.5	4.3	4.3

* 5 = very good, 4 = good, 3 = adequate, 2 = somewhat inadequate, 1 = very inadequate

Table 11.9 presents the percent ratings to this same question on each stage by all reviewers combined.

TABLE 11.9

Usefulness of the Six Stages
Percent ratings of each stage by all respondent groups combined

Stage	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate	Total
I. Relationship Building	59.3	25.9	8.6	4.9	1.2	100
II. Diagnosis	55.7	28.4	9.1	5.7	1.1	100
III. Acquiring Resources	42.7	28.1	15.7	11.2	2.2	100
IV. Solution Choosing	58.8	23.5	12.9	3.5	1.2	100
V. Gaining Acceptance	60.2	28.9	7.2	3.6	0	100
VI. Stabilization	50.0	31.0	16.7	1.2	1.2	100
All Six Stages Combined	54.3	27.6	11.7	5.1	1.2	100

Table 11.10 presents the percent ratings by each respondent group of all six stages combined.

TABLE 11.10 Usefulness of the Six Stages
Percent ratings by each respondent group of
all six stages combined

Group	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate	Total
State Dept.	59.5	26.0	9.2	4.6	0.6	100
Title III	55.9	23.4	10.8	9.0	0.9	100
R.E.L.	47.2	36.0	10.1	3.4	3.4	100
Local	49.5	27.8	17.5	4.1	1.0	100
Other	55.0	27.5	15.0	2.5	0	100
TOTAL - All Groups	54.3	27.6	11.7	5.1	1.2	100

These three tables show no clear differences among the respondent groups on how useful they consider the six stages to be as a whole. However, different groups seem to feel that different stages apply more directly to their own work. The tables also show that although Stage III received an overall "good" rating, it is regarded by all groups to be the least useful.

The overall rating of interest in the six stages was presented in Table 11.3. In Table 11.11 this information is presented for each of the stages individually.

[Insert Table 11.11 here]

Stage III seems to be lagging behind in interest as well as in usefulness, but apart from this we were very pleased with the reaction of our reviewers to the stages. Only 5.2% of respondents felt the six stages to be of inadequate interest, and only 6.3% felt them to be of inadequate usefulness.

TABLE 11.11

Interest of the Six Stages
Percent ratings and mean ratings of each stage by all respondent groups combined

Stage	Percent Ratings						Mean Ratings
	Very Good	Good	Adequate	Some-what Inadequate	Very Inadequate	Total	
I. Relationship Building	42.6	38.3	14.9	4.3	0	100	4.4
II. Diagnosis	44.8	33.3	16.1	5.7	0	100	4.2
III. Acquiring Resources	34.6	29.6	23.5	12.3	0	100	3.8
IV. Solution Choosing	54.8	29.8	11.9	3.6	0	100	4.4
V. Gaining Acceptance	55.6	32.1	9.9	1.2	1.2	100	4.4
VI. Stabilization	43.4	39.8	14.5	2.4	0	100	4.2
All Six Stages Combined	46.2	33.5	15.1	5.0	0.2	100	4.2

* 5 = "very good"; 1 = "very inadequate"

Finally, we asked several more questions designed to aid us in our task of revising the "Guide." We asked the reviewers to rate each stage on writing style, organization, completeness and value of quotations. The mean ratings on these ranged from 4.0 to 4.3 on all stages combined, but Stage III received the lowest ratings on each of these dimensions (3.6 - 4.0). This information, together with the fact that Stage III had rated lowest on interest and usefulness, led us to the conclusion that Stage III would need the most extensive revision. Accordingly, we completely reorganized and recomposed Stage III, and we felt much more satisfied with it as it appeared in the new draft, Prototype #3. We made minor changes in the other five stages in response to specific suggestions by reviewers.

4. *Evaluation of the Appendices*

We asked the reviewers to rate the usefulness of each appendix as a handy reference to other more complete resources which a change agent might want to use. These responses are presented in Table 11.12.

[Insert Table 11.12 here]

We found these responses to be very gratifying, and we were especially pleased to note that only 1.7% of reviewers considered the appendices to be of little value. Thus, apart from the updating of Appendix C, which was necessary due to obsolescence, we felt no significant changes in the appendices were called for in the preparation of Prototype #3.

TABLE 11.12

Usefulness of the Appendices
Percent ratings and mean ratings

Appendix	Percent Ratings					Total	Mean Ratings*
	Very Useful	Mostly Useful	Adequately Useful	Not Too Useful	Not at All Useful		
A. Strategies and Tactics	58.5	24.4	13.4	3.7	0	100	4.4
B. Information Sources	66.7	22.2	9.9	1.2	0	100	4.5
C. Annotated Bibliography	58.9	27.4	13.7	0	0	100	4.5
Total - All Appendices	61.4	24.6	12.3	1.7	0	100	4.5

* 5 = "very useful"; 1 = "not at all useful"

5. *Evaluation of Proposed Additions to the "Guide"*

We proposed several additions which might be made to the "Guide" and asked each reviewer to evaluate each on the basis of potential usefulness in his own particular work as a change agent. These responses are given in Table 11.13.

TABLE 11.13

Desirability of Proposed Additions
Percent ratings and mean ratings

	Percent Ratings					Total	Mean Ratings*
	Essential	Good Idea	No Opinion	Not Necessary	Bad Idea		
Section on preparing for the role of change agent	29.5	57.7	7.7	5.1	0	100	4.1
Checklists for each stage	35.1	44.2	13.0	6.5	1.3	100	4.1
Training Programs	35.1	48.1	7.8	9.1	0	100	4.1
Appendix of names of other change agents	13.2	51.3	11.8	21.1	2.6	100	3.5

* 5 = "essential"; 1 = "bad idea"

These responses confirmed what we had already suspected; several additions to the handbook could prove to be very valuable and useful. Checklists of procedures and major points have been prepared to accompany each of the six stages. These checklists, as we mentioned above, are contained in "Attachment #2" of this report.

We described in Section I above the history of our development of change agent training program designs. The design which evolved, and which we have called "Manual on Educational Change Agent Training," is Attachment #3 of this report.

Rather than adding a section on preparing for the role of change agent to the "Guide" itself, we have included an extensive discussion of this subject in the Training Manual. Additionally, we have amended the Introduction of the "Guide" to include more discussion on defining the role of change agent.

Considering the relatively low response rating given to the idea of adding an appendix of names and addresses of change agents, and also considering the difficulties involved in keeping such a list up to date, we have decided against making such an addition. Thus, all but one of the proposed additions suggested above have now been prepared.

Section II

APPENDIX A

Letter of Invitation to Potential
Reviewers of the "Guide"

(Prototype #2)

ISR

INSTITUTE FOR RESEARCH ON UTILIZATION OF SCIENTIFIC KNOWLEDGE / INSTITUTE FOR SOCIAL RESEARCH / THE UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN 48106

I am writing to ask for your help in reviewing a new book. We are developing a handbook on the process of change and innovation in education. The book, A Guide to Innovation in Education, is written for educators who are involved in getting innovations implemented by schools and school systems. It describes the process of change within individuals, groups, and organizations and suggests specific procedures that can be used to facilitate this process. This handbook is based on considerable research on how people adopt innovations and come to utilize scientific knowledge. The research material was reviewed by Dr. Ronald G. Havelock in a report entitled The Dissemination and Utilization of Knowledge: A Comparative Survey and Theoretical Analysis of the Literature, 1969, now available through ERIC. (Both projects are being supported by the Research Utilization Branch of the U.S. Office of Education.)

In order to test the relevance of our efforts on the handbook, we need to get the reactions of a few key educators to our first draft. We would like to have you read over the first draft and give us your reactions to it on a brief questionnaire. For your help we will send you a complimentary copy of the final version of the handbook.

We would send you the draft and questionnaire early in October, hoping to make the final version available by February, 1970. Naturally, we would want to have your responses as early as possible for use in revising the draft.

We have enclosed with this letter a copy of the introduction to the handbook. If, in reading it over, you feel that you would like to participate in reviewing the draft of the entire work, please return the enclosed form to us by September 19, 1969. If the handbook is not relevant to your particular job, please pass this information along to someone else in your organization whom you think would find such a tool useful.

If you have any questions, do not hesitate to call me collect at (313) 764-2560.

Sincerely,

(Mrs.) Janet C. Huber
Assistant in Research

JCH:rw

Enclosures

Section II

APPENDIX B

**Form for Background
Information on Reviewers**

I would like to receive a complimentary copy of the final version of A Guide to Innovation in Education in exchange for reading the first draft of this manual and responding to a brief questionnaire about it.

Name: _____

Title: _____

Organization: _____

Address: _____

Phone: _____

Education (Number of years or highest degree earned and field of specialization): _____

Age: _____

Please check ALL of the following items that describe your current role (either part-time or full time) as an educator and change agent.

_____ Teaching (Subject and/or grade level: _____)

_____ Special Services (Instructional Materials Specialist, Reading Consultant, etc. Specify: _____)

_____ Counseling

_____ Administration

_____ Research

_____ Development

_____ In-Service Education Instruction

_____ Consultation (Type of client and speciality: _____)

_____ Title I - ESEA (Type of Project: _____)

Project Director _____ Project Staff _____

_____ Title III - ESEA (Type of Project: _____)

Project Director _____ Project Staff _____

_____ Participation in Committee, Task Force, Project, etc. (Please list the title of the groups and clarify, if necessary, on the back of this form)

_____ Membership in Professional Associations (Please list on the back of this form)

_____ Other (Please specify: _____)

Return this form in the enclosed envelope to: INSTITUTE FOR SOCIAL RESEARCH

P.O. Box 1248

The University of Michigan
Ann Arbor, Michigan 48106

Section II

APPENDIX C

Reviewer Questionnaire
and Cover Letter

R

RESEARCH ON UTILIZATION OF SCIENTIFIC KNOWLEDGE / INSTITUTE FOR SOCIAL RESEARCH / THE UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN 48106

December 2, 1969

Thank you for offering to assist in reviewing A Guide To Innovation in Education. Enclosed is the first draft of that handbook and the questionnaire, as promised in our previous letter to you. You may wish to glance through the questionnaire first and then fill in your reactions as you are reading the handbook. We also urge you to add comments and suggestions on issues not adequately covered in this questionnaire.

We regret that we were unable to send you this draft as early as we had hoped, but we would appreciate the return of your questionnaire at your earliest convenience. We do still expect to have the final version available sometime this spring and will be sending you a copy at that time.

Again, if you have questions on any of the enclosed materials, please call me collect at (313) 764-2560.

Sincerely,

Ronald G. Havelock, Ph.D.
Project Director

Enclosure: A Guide to Innovation in Education
"Reviewer Questionnaire"
Return envelope for questionnaire

REVIEWER QUESTIONNAIRE

A GUIDE TO
INNOVATION IN
EDUCATION

by

Ronald G. Havelock

The sections of this questionnaire correspond to parts in the handbook:

- A. Introduction
- B. Case Studies
- C. Stages of Planned Change
- D. Appendices
- E. Proposed Additions to the Handbook

Each section contains (1) a statement of the author's goals for that part of the handbook, and (2) several questions to get your reactions both to the goals themselves and to the manner in which they were fulfilled.

REVIDER: _____

4. Were the references to case material (see example below) in the text of Part Two...

page 37 :

THE EFFORTS OF BOTH STEVE AND MIKE WERE THWARTED BY OPPOSITION FROM ORGANIZED CITIZEN GROUPS.

useful for relating the theory to real life?

not needed?

difficult to follow?

 distracting?

5. Please indicate (by page number and, where necessary for clarification, the name of the change agent) any references to case studies which you felt were not useful--or would be confusing to the reader.

10

A. INTRODUCTION

The introduction should attract the interest of people who see themselves as change agents. It should clearly indicate what a change agent is and should suggest the main objectives and contents of the handbook.

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style	_____	_____	_____	_____	_____
2. Organization	_____	_____	_____	_____	_____
3. Interest	_____	_____	_____	_____	_____
4. Clarity of Pictures and Diagrams	_____	_____	_____	_____	_____
5. Value of Pictures and Diagrams	_____	_____	_____	_____	_____
6. Does it serve to show who a 'change agent' is?	_____	_____	_____	_____	_____
7. Does it make the objectives of the handbook clear?	_____	_____	_____	_____	_____
8. Do you have specific suggestions for the Introduction?	_____ _____ _____ _____ _____ _____ _____				

B. CASE STUDIES

It is hoped that the case studies of real change agents' experiences ("Part One" of the handbook) will substantially increase the relevance of the handbook for the practitioners of change in education. Because so few of those people who are now serving as 'change agents' recognize themselves--or are recognized by others--as such, it is hoped that the variety of roles defined in the case studies as 'change agent' will lead many readers to identify change agent activities in their own role.

1. Are the case studies which were used typical of the kinds of problems and situations that you and other change agents you know are involved in? (CHECK THE SPACE FOR EACH CASE STUDY which best indicates how typical it is.)

Very Typical ← ----- → Not Typical
1 2 3 4 5

- a. Linda (black studies): _____
- b. Mike (sex education): _____
- c. Steve (staff development): _____
- d. Henry (social studies curricula): _____

2. Would some other example have illustrated the relevance of the handbook to your work more effectively?

3. Did you find that the case studies presented were (CIRCLE ONE FOR EACH LINE)

- a. too detailed about the right amount of detail not enough detail
- b. too long about the right length too short
- c. not very interesting somewhat interesting quite interesting
- d. too many about the right number too few

C. STAGES OF PLANNED CHANGE

"Part Two" of the handbook contains the principles about change and change agency which have been gleaned from the research literature on innovation. These principles have been presented in six "stages" representing the process of planned change from the point of view of the change agent. It was thought that this organization would be the most appropriate for a handbook which is intended for use by educational practitioners as they are caught 'in the thick of' innovating.

The Six Stage Model

1. Are the stages clearly defined for you as distinct steps in the process of innovation? (CIRCLE ONE)
Very clear Mostly clear Adequately clear Somewhat clear Not at all clear
2. Are the stages divided into useful groupings for your change efforts in the field? (CIRCLE ONE)
Very useful Mostly useful Adequately useful Not too useful Not at all useful
3. Should other stages be added? (If 'yes,' specify) _____

4. Should some stages be dropped or combined? _____

5. Was the dual column page set-up used throughout the six stages helpful?

The Specific Stages

(This section of the questionnaire includes a one-page rating sheet for each of the six chapters in "Part Two" of the handbook.)

Rating of: "Stage 1: Building a Relationship"

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style (clarity, flow, conciseness)	_____	_____	_____	_____	_____
2. Organization (Was the structure of the chapter clear and readable?)	_____	_____	_____	_____	_____
3. Completeness (Was the topic adequately covered?)	_____	_____	_____	_____	_____
4. Interest (Did it hold your attention?)	_____	_____	_____	_____	_____
5. Usefulness (Could you think of ways that it applied to your own work?)	_____	_____	_____	_____	_____
6. Value of Quotations (Were they usually 'on target'?)	_____	_____	_____	_____	_____
7. Are there any important issues which we have neglected?	_____				

8. Do you have any disagreements with the position statements that we have made?	_____				

9. Are there any positions that you would like to see emphasized?	_____				

10. Do you have any other suggestions for the chapter or comments on the above points?	_____				

Rating of: "Stage II: Diagnosing the Problem"

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style (clarity, flow, conciseness)	_____	_____	_____	_____	_____
2. Organization (Was the structure of the chapter clear and readable?)	_____	_____	_____	_____	_____
3. Completeness (Was the topic adequately covered?)	_____	_____	_____	_____	_____
4. Interest (Did it hold your attention?)	_____	_____	_____	_____	_____
5. Usefulness (Could you think of ways that it applied to your own work?)	_____	_____	_____	_____	_____
6. Value of Quotations (Were they usually 'on target'?)	_____	_____	_____	_____	_____
7. Are there any important issues which we have neglected?	_____				

8. Do you have any disagreements with the position statements that we have made?	_____				

9. Are there any positions that you would like to see emphasized?	_____				

10. Do you have any other suggestions for the chapter or comments on the above points?	_____				

Rating of: "Stage III: Retrieving Relevant Knowledge"

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style (clarity, flow, conciseness)	_____	_____	_____	_____	_____
2. Organization (Was the structure of the chapter clear and readable?)	_____	_____	_____	_____	_____
3. Completeness (Was the topic adequately covered?)	_____	_____	_____	_____	_____
4. Interest (Did it hold your attention?)	_____	_____	_____	_____	_____
5. Usefulness (Could you think of ways that it applied to your own work?)	_____	_____	_____	_____	_____
6. Value of Quotations (Were they usually 'on target'?)	_____	_____	_____	_____	_____

7. Are there any important issues which we have neglected? _____

8. Do you have any disagreements with the position statements that we have made?

9. Are there any positions that you would like to see emphasized? _____

10. Do you have any other suggestions for the chapter or comments on the above points?

Rating of "Stage IV: Selecting the Innovation"

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style (clarity, flow, conciseness)	_____	_____	_____	_____	_____
2. Organization (Was the structure of the chapter clear and readable?)	_____	_____	_____	_____	_____
3. Completeness (Was the topic adequately covered?)	_____	_____	_____	_____	_____
4. Interest (Did it hold your attention?)	_____	_____	_____	_____	_____
5. Usefulness (Could you think of ways that it applied to your own work?)	_____	_____	_____	_____	_____
6. Value of Quotations (Were they usually 'on target'?)	_____	_____	_____	_____	_____
7. Are there any important issues which we have neglected?	_____				

8. Do you have any disagreements with the position statements that we have made?	_____				

9. Are there any positions that you would like to see emphasized?	_____				

10. Do you have any other suggestions for the chapter or comments on the above points?	_____				

Rating of: "Stage V: Gaining Acceptance"

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style (clarity, flow, conciseness)	_____	_____	_____	_____	_____
2. Organization (Was the structure of the chapter clear and readable?)	_____	_____	_____	_____	_____
3. Completeness (Was the topic adequately covered?)	_____	_____	_____	_____	_____
4. Interest (Did it hold your attention?)	_____	_____	_____	_____	_____
5. Usefulness (Could you think of ways that it applied to your own work?)	_____	_____	_____	_____	_____
6. Value of Quotations (Were they usually 'on target'?)	_____	_____	_____	_____	_____
7. Are there any important issues which we have neglected?	_____				

8. Do you have any disagreements with the position statements that we have made?	_____				

9. Are there any positions that you would like to see emphasized?	_____				

10. Do you have any other suggestions for the chapter or comments on the above points?	_____				

chapters on the stages of the planned change process were appropriate. Over 80% of respondents considered these sections to be either very useful or essential. It was also predictable that, of the appendices, Appendix A (Strategies and Tactics) would be considered the most useful for this type of conference.

Table III.1 indicates the The Planning of Change (Bennis, Benne and Chin) was potentially an excellent choice as background reading; 94.7% of those who read it found it either very useful or essential in preparing for the conference. As Table III.1 also shows, however, many people did not have the time to read a book of this length. More than half of the respondents had read none of the book, and of those who replied to the question only about half indicated that they had read the entire book, with the remainder making a sampling of a variety of articles.

The other two background readings, Managing Change (Rogers and Svenning) and Using Research for Change (Watson) were apparently not such good choices, but these were considered at least somewhat useful by most of the participants.

Table III.1 shows that the materials which were rated as most useful in preparing for CECAT were also generally considered to be most appropriate for use in the training of change agents. The Planning of Change and Chapter 11 of Planning for Innovation were again the most highly rated, with most sections of the "Guide" also being considered quite important.

Somewhat surprising, however, is the fact that only 34.2% of respondents felt the chapter on roles (Chapter 7) of Planning for Innovation to be a "must" for change agent training. We also felt that while the case study section of the "Guide" might reasonably be considered of lesser value in preparing for CECAT, it would be of key importance in making the "Guide" useful in the training of change agents. However, only one third of respondents felt this to be the case.

Participants were asked if they had additional reactions or comments on the background reading and 75% of them did. The most common comment was to the effect that the readings were appropriate and relevant. A number of people commented that they felt exceptionally well prepared for the conference and that their involvement was increased by our asking for their reactions to the readings prior to the conference. One respondent commented that the readings "created an attitude of participation and involvement in something that was going to be meaningful."

There was also some sentiment that there was too much material to read and that either summaries of the literature should have been prepared or else that special attention should have been directed toward certain key sections as was done in the case of chapters 7 and 11 of Planning for Innovation. One respondent wrote "Too much was expected for the length and type of meeting scheduled. Even if I had read everything there would not have been the opportunity to bring the learnings to bear most productively." Another participant summed it up by saying "I thought all the readings were highly relevant but feel many participants did not read them all."

Rating of: "Stage VI: Stabilizing the Innovation and Terminating the Relationship"

	Very Good	Good	Adequate	Somewhat Inadequate	Very Inadequate
1. Writing Style (clarity, flow, conciseness)	_____	_____	_____	_____	_____
2. Organization (Was the structure of the chapter clear and readable?)	_____	_____	_____	_____	_____
3. Completeness (Was the topic adequately covered?)	_____	_____	_____	_____	_____
4. Interest (Did it hold your attention?)	_____	_____	_____	_____	_____
5. Usefulness (Could you think of ways that it applied to your own work?)	_____	_____	_____	_____	_____
6. Value of Quotations (Were they usually 'on target'?)	_____	_____	_____	_____	_____
7. Are there any important issues which we have neglected?	_____				

8. Do you have any disagreements with the position statements that we have made?	_____				

9. Are there any positions that you would like to see emphasized?	_____				

10. Do you have any other suggestions for the chapter or comments on the above points?	_____				

D. APPENDICES

The three appendices included in this handbook ("Part Three") are intended simply as a handy reference to other, more complete resources that a change agent may want to use.

1. How would you rate each of the appendices?

	Very Useful	Mostly Useful	Adequately Useful	Not Too Useful	Not At All Useful
a. Appendix A: Strategies and Tactics	_____	_____	_____	_____	_____
b. Appendix B: Major Information Sources	_____	_____	_____	_____	_____
c. Appendix C: Major Works on Change	_____	_____	_____	_____	_____

2. While realizing that this handbook cannot provide an exhaustive listing of educational resources, we wish to correct any glaring oversights. Have you any additional suggestions for inclusion in:

- a. "Strategies and Tactics: A Glossary and Guide to Selection"
- b. "Major Information Sources in Education: A Directory"
- c. "Major Works on Change in Education: An Annotated Bibliography"

E. PROPOSED ADDITIONS TO THE HANDBOOK

This handbook is one part of a long range development program for innovation in education. The program calls for a variety of designs for enhancing the linkages between educational resources and educational clients. Among them will undoubtedly be some further revision of this handbook. In this initial version much thought was given to future adaptations to incorporate new information as it became available.

1. What additional aids would be most useful to you? Please rate the following suggested aids, considering what you would most like to have--or most urgently need--for your current 'on the job' work as a change agent.

	Essential	Good Idea	No Opinion	Not Necessary	A Bad Idea
a. An additional section: 'Preparing for the Role of Change Agent'	_____	_____	_____	_____	_____
b. Check lists of 'procedures' or 'points to remember' for each of the stages	_____	_____	_____	_____	_____
c. Training programs to accompany the handbook	_____	_____	_____	_____	_____
d. An appendix of names and addresses of other change agents in settings similar to yours	_____	_____	_____	_____	_____
e. Other (please specify: _____ _____ _____ _____)	_____	_____	_____	_____	_____

Section III: EVALUATION OF CECAT BASED ON POST-CONFERENCE REACTIONS OF PARTICIPANTS*

The participants of the Conference on Educational Change Agent Training (CECAT), held on May 25-27, 1970 in Clinton, Michigan, were asked to fill out an extensive form evaluating the effectiveness of the conference.** Forty-one participants completed this form, representing about 90% of those who were able to stay until the end of the conference. In addition to evaluating the activities of the conference itself, participants were asked to evaluate the background readings and the printed conference materials which were sent out to them before the conference. The questionnaire also solicited their views on post-conference action possibilities. In this section we will report on the participants' evaluation of these four areas.

A. Background Readings

The background reading materials were intended to provide all participants with a common base of knowledge regarding processes of innovation, planned change and knowledge utilization. It was hoped that these materials would prove to be sufficiently comprehensive and stimulating so that we would be successful in our attempt to derive implications relevant to change agent training.

The participants were asked to give their opinion as to the value of each of the reading materials as background to the CECAT conference. They were also asked whether they considered each literature source to be a "must" item in the training of change agents. The responses to these questions are tabulated in Table III.1. Since not all participants had read each of the background sources, the percentage responses reported in this table are based only on the number of respondents who indicated they had actually read the materials.

[Insert Table III.1 here]

Since we felt that it would be unlikely that all participants would have time to read all of Planning for Innovation (approximately 500 pages), we directed their attention particularly to chapters 7 (Roles) and 11 (Summary) as being the most relevant. On the evaluation form we asked for separate ratings of these two chapters and for a rating of all other chapters combined. Table III.1 indicates that participants did indeed find chapters 7 and 11 to be particularly useful in preparing for this conference, with 97.4% of respondents regarding chapter 11 as either very useful or essential, and 86.9% rating chapter 7 in one of these two categories.

Since we were particularly concerned about participants' reactions to the "Guide," (Prototype #3), we asked for separate ratings of each section of this book. We were very pleased with the responses as a whole and felt that for a conference of this type the higher ratings for the Introduction and the six

*This section was prepared by Mary C. Havelock.

**A sample "CECAT Evaluation" form is included as Appendix A of this section.

TABLE III.1

Evaluation of Background Readings
Percent Ratings*

	Number Responding to This Item	Usefulness in Preparing for CECAT						Essential for Training Program
		No Opinion	Not Very Useful	Somewhat Useful	Very Useful	Essential	Total	
<u>Planning for Innovation:</u>		%	%	%	%	%	%	
Summary Chapter (11)	39	0	0	2.6	41.0	56.4	100	60.
Roles Chapter (7)	38	0	0	13.2	47.4	39.5	100	34.
Other Chapters	27	0	0	40.7	44.4	14.8	100	25.
TOTAL	104	0	0	16.3	44.2	39.4	100	41.
<u>Guide to Innovation:</u>								
Introduction	35	0	2.9	11.4	45.7	40.0	100	45.
Case Studies	36	0	13.9	22.2	44.4	19.4	100	33.
Stages I - VI	35	0	2.9	14.3	40.0	42.9	100	51.
Appendix A: Strategies	30	3.3	3.3	20.0	43.3	30.0	100	40.
Appendix B: Info. Sources	31	0	12.9	25.8	38.7	22.6	100	45.
Appendix C: Bibliography	30	0	23.3	13.3	33.3	30.0	100	43.
TOTAL	197	0.5	9.6	17.8	41.1	31.0	100	43.
<u>Managing Change (Rogers and Svenning)</u>	32	3.1	3.1	31.3	43.8	18.8	100	34.
<u>Using Research For Change (Watson)</u>	33	3.0	12.1	36.4	39.4	9.1	100	21.
<u>The Planning of Change (Bennis, Benne & Chin)</u>	19	0	0	5.3	57.9	36.8	100	52.

*Percents are based on the number who responded to each item.

We also asked participants what reading materials they would take off the list in designing a training workshop, and what other readings they would add. Fifty-six percent of respondents felt that the reading list should be cut down in some way; Table III.2 shows the percentage of respondents favoring deletion of each of the background readings.

TABLE III.2 Background Readings to be Deleted from
Reading List for Training Program
Percent Ratings*

<u>Background Reading</u>	<u>Percent Favoring Deletion</u>
1. <u>Planning for Innovation: All</u>	7.3
<u>Planning for Innovation: Early Chapters</u>	2.4
2. <u>Guide to Innovation</u>	0
3. <u>Managing Change</u> (Rogers and Svenning)	4.8
4. <u>Using Research for Change</u> (Watson)	19.5
5. <u>The Planning of Change</u> (Bennis, Benne & Chin): All	12.2
<u>The Planning of Change</u> (Bennis, Benne & Chin): Some Sections	2.4
6. Unspecified	7.3
 Total	 55.9

*Percents are based on all 41 respondents who handed in CECAT Evaluation Forms.

This table shows that although there is a general feeling that there is too much reading material there is no clear agreement as to exactly how it should be cut down. Probably most participants would be satisfied if the Watson article were deleted and if only certain sections of Planning for Innovation and The Planning of Change were assigned.

Participants had a wide variety of suggestions as to what might be added to the reading list for a training workshop, but here there is virtually no consensus at all. Eighteen people suggested specific additions, but only one article received as many as two mentions: this was the monograph "Change in School Systems," a COPEd-NTL publication edited by Watson.* Several people did suggest that some readings should be added which covered the R&D approach more thoroughly.

*Available from NTL-IABS, 1201 Sixteenth St., N.W., Washington, D.C. One of two paperback volumes edited by Watson for COPEd. (The other is "Concepts for Social Change"). \$2.50 each or \$4.50 for set.

B. Printed Conference Materials

In addition to the background readings, several types of printed materials were sent to participants before the start of the conference. These were designed to focus attention on different approaches to the change process and to the training of change agents. We hoped that participants would consider these materials in terms of their own conceptual frameworks and practical approaches and thus develop a clear notion of how they could apply their own experience to the task of the conference. The participants' evaluation of these materials are presented in Table III.3.

TABLE III.3 Evaluation of Printed Conference Materials
Percent Ratings*

	No Opinion	Not Very Useful	Some- what Useful	Very Useful	Essential	Total
1. List of statements about change process from Chapter 11.	7.3	22.0	22.0	31.7	17.1	100
2. List of statements about training (by Charles Jung)	9.8	29.3	41.5	14.6	4.9	100
3. Listing of additional points made by participants before Conference	9.8	36.6	39.0	11.0	3.7	100
4. Letters and other descriptive materials from CECAT	12.2	14.6	22.0	36.6	14.6	100
Total	9.8	25.6	31.1	23.5	10.1	100

*Percent responses based on all 41 participants who turned in CECAT Evaluation Forms.

The list of statements about the change process derived from Chapter 11 of Planning for Innovation were quite favorably rated; it was to these that participants had been explicitly requested to react. All participants had been asked to fill out a form indicating their judgment of the importance of the topics in this list and to prepare to lead a discussion in the area in which they considered themselves to be particularly well-informed. This device was considered very favorably by some; one participant commented "Your efforts spent listing the key points of each change process model paid off extremely well. Your procedure for forcing people to select topics to report on was a master stroke." Not all participants shared this view, however. There were those who felt that not enough use was made of this preparation; one participant wrote "the advance materials and feedback were excellent - but we didn't build on these to the degree we should have." Other participants felt that these preparations were not relevant to the conference task; one respondent

commented "although the statements on the change process provided a basis for discussion.... I don't believe this contributed to thoughts about training."

The list of statements about training prepared by Charles Jung should have appealed to those who were dissatisfied with the focus of the change process statements. However, as Table III.3 shows, this list was not considered to be quite as useful. Part of the problem here seemed to be that this list was not sent out soon enough, and several people commented that there was an insufficient attempt made to focus discussion on it.

The listing of additional points made by participants was viewed by some people as superfluous, but others found them particularly stimulating, and a number of very lively discussions on these points were held at the conference on Monday evening.

Whatever the relative merits of the different pre-conference materials, collectively they seem to have effectively fulfilled the objective of preparing the participants for the conference and involving them in the task. One participant commented "I have never felt so well prepared for a conference as I was for this one."

C. Conference Activities

Participants were asked to evaluate each separate session of the conference as well as its general aspects. These responses are presented both as percent ratings and mean ratings in Table III.4.

[Insert Table III.4 here]

One participant wrote "I do not believe that these questions really get at the essence of what was to me a very powerful experience." Perhaps this was true for a majority of participants, since, as Table III.4 shows, the conference as a whole received a higher rating than did any of its individual parts with the exception of "opportunities available for informal discussion." Informal contacts were in fact a key to the success of the conference from the point of view of many people. The conference was described by some as the best opportunity they had ever experienced to carry on informal conversations with a wide variety of stimulating and well-informed colleagues. One participant described the gathering as "an unusual collection of experts."

The mean rating of only 3.1 for the design of the conference indicates that we made some errors in judgment here; participants on the average were only "somewhat satisfied" with the design. There was some disagreement as to whether the conference was structured too rigidly or too loosely, but the primary criticism was that not enough time had been allotted to the work in the task force groups.

From the percentage ratings in Table III.4 we can see that there was quite a range of opinion as to the success of the meetings which were held on Monday and Monday evening. This range can be largely explained by the varying success of each of the six subgroups as rated by its own members.

Evaluation of Conference Activities
Percent Ratings and Mean Ratings*

Number Who Re- sponded to this Item	Percent Ratings							Mean Ratings**
	Very Dissat- isfied	Somewhat Dissat- isfied	Somewhat Satisfied	Quite Satisfied	Very Satisfied	One of the best I have attended	Total	
Conference as a whole 41	0	4.9	17.1	39.0	32.9	6.1	100	4.2
Design of conference 41	2.4	31.7	31.7	17.1	17.1	0	100	3.1
Orientation Monday 9am. 36	2.8	13.9	19.4	44.4	16.7	2.8	100	3.7
Change Pro- cess Dis- cussions Monday 39	10.3	15.4	20.5	30.8	23.1	0	100	3.4
Group Sum- maries - Monday Cocktail 36	8.3	13.9	36.1	36.1	5.6	0	100	3.2
Monday evening session 28	14.3	3.6	28.6	17.9	25.0	10.7	100	3.7
Training Panel - Tues. a.m. 36	8.3	23.6	23.6	30.6	11.1	2.8	100	3.2
Training Statements Groups-Tues. 35	8.6	8.6	34.3	37.1	11.4	0	100	3.2
Group Sum- maries - Tuesday Cocktail 23	4.3	17.4	47.8	26.1	4.3	0	100	3.1
Your Task Force & its Product 31	3.2	11.3	24.2	22.6	35.5	3.2	100	3.9
Other Task Force Pro- ducts 29	0	20.7	31.0	27.6	20.7	0	100	3.5
Discussion Critique of Task Force Products 25	0	44.0	28.0	20.0	8.0	0	100	2.9
Implemen- tation-Follow through discussions 19	10.5	21.1	47.4	10.5	10.5	0	100	2.9
Conference Site 38	31.6	26.3	23.7	10.5	7.9	0	100	2.2
Opportunities for informal discussions 38	0	5.3	15.8	23.7	50.0	5.3	100	4.3
Your own contribution 38	2.6	25.0	48.7	21.1	2.6	0	100	3.0

*Percents and means are based on the number who responded to each item.
** 6 = "one of the best I have attended"; 1 = "very dissatisfied"

Though the mean rating for all change process group discussions (item #4) was 3.4, the mean ratings of the individual sub-groups ranged from 2.5 to 4.3. An even greater disparity occurred for the Monday evening sessions (item #6), for which the sub-group ratings by their own members ranged from 1.7 to 5.5.

The panel discussion on training which was held on Tuesday morning (item #7) provoked many comments, which varied from disapproval to enthusiastic appreciation. Though described by some as stimulating and on target, the panel was felt by others to be lacking in planning and structure and to be unrelated to the outcome goals of the conference. The panel members themselves gave the panel a mean rating of 3.0, slightly lower than the rating of 3.2 which it received from all participants.

Though participants expressed some dissatisfaction with the early activities of the conference, they were quite pleased with their primary task activity, the designing of training programs in task force groups. As with the Monday groups, there was considerable variation in the self-ratings of the different task force efforts by the members of each group. Here we notice an interesting relationship between task force size and satisfaction with the product created. There were four large groups (5 to 7 members) which gave themselves mean ratings which fell between 4.0 and 4.5. Two groups each had two members; one of these rated itself as 5.0 - the highest rating received by any group - and the other gave itself a rating of 3.0. Four participants chose to work alone, and these people gave themselves ratings of only 2.0 or 3.0. This could be explained partly on the basis of modesty of the solo workers. More likely the experience of collaborating in a group is emotionally and intellectually stimulating, with the sharing of diverse ideas yielding a richer and more exciting product. We might also speculate that choosing just one partner with whom to work may be a chancey proposition. The only criticism expressed about the task force groups was that there was insufficient time to do justice to the assignment.

Participants generally liked the products of their own task force group slightly better than they did those of other groups (mean rating of 3.9 for own group as opposed to 3.5 for other groups). It would stand to reason that people would be most enthusiastic about their own areas of interest, but in addition to this the press of time at the end of the conference did not allow for a thorough total-group discussion of the task force products. This discussion (item #12) received a low rating because of this time factor.

The discussion on implementation and follow-through of training designs (item #13) received a similarly low rating, also because of inadequate time.

We were somewhat surprised that participants gave their own contribution (item #16) a mean rating of only 3.0; we would have expected this rating to be very close to that of the task force group ratings. Many people felt they had insufficient time to write and contribute as they would have liked, and one person commented "I gained more than I contributed." But another participant who was very satisfied with his performance stated "I worked hard and I liked it."

Finally, Table III.4 shows that the site of the conference was its least satisfactory aspect, and we received the most numerous and most colorful comments on this item. There was agreement that the food was good and the setting was

pleasant, with its remoteness being judged as an advantage. The accommodations, however, were described by some participants as "spartan" and "primitive."

In order to probe more deeply into participants' feelings about the conference, we asked them to comment on what specific part of the conference they found most meaningful and from which part they learned the most. The comments made in response to these questions are summarized in Table III.5. The percents in this table are based on the number of participants who responded to each question.

TABLE III.5 Conference Activities Which Were Judged The Most Meaningful and The Best Learning Experience
Percent Ratings*

What part of the conference did you find most MEANINGFUL? (35 responses)	Percent	From what part of the conference did you LEARN THE MOST? (34 responses)	Percent
Task Force work	54.3	Task Force work	38.2
Informal contacts	22.9	Monday group sessions	26.5
Monday group sessions	14.3	Informal contacts	17.7
Pre-conference background reading	2.9	Pre-conference background reading	14.7
Group feedback and synthesis sessions	2.9	Group feedback and synthesis sessions	2.9
Training panel	2.9		
TOTAL	100	TOTAL	100

*Percents are based on the number of responses to each question.

We were pleased to find that the task force group work was regarded as being the most meaningful activity as well as providing the greatest opportunity for learning. The high rating of the value of informal contacts illustrates again the fact that the conference participants represented a very unusual gathering of highly qualified experts in interrelated branches of the field of education.

We had hoped to design CECAT in such a way as to make it a model for future gatherings of this type. To find out how well we had succeeded in this aim we asked participants to indicate whether there was anything they would have liked

to have done more of and whether there was anything they would have liked to have done less of. The comments we received in response to these questions are summarized in Table III.6. Here the percents are based on the 41 respondents who handed in the evaluation form.

TABLE III.6

Conference Activities Judged to Have
Occupied Too Little or Too Much Time
Percent Ratings*

What would you have liked to have done <u>more</u> of?	Percent	What would you have liked to have done <u>less</u> of?	Percent
More time in task force groups	19.5	Monday group discussions	12.2
Synthesis and total-group discussions	9.8	Random discussions	12.2
Sharper definition of task force assignments	7.3	"Impressing each other"	12.2
Discussion of values issue	4.9	Other	17.1
Informal meetings	4.9	Nothing - conference design was satisfactory	12.2
Work on other conference materials	4.9	No response	34.1
Other	22.0		
Nothing - conference design was satisfactory	7.3		
No response	19.5		
TOTAL	100	TOTAL	100

*Percents are based on all 41 respondents who handed in CECAT EVALUATION forms.

These responses indicate that the conference would have been viewed more satisfactorily if we had begun the task force work sooner, cutting down the time spent in discussing the change process and the participants' own points from all day Monday to only a portion of that day. If we had done this we might also have cut down on the amount of "random discussion" and "impressing each other." Running through the comments which we have grouped under these two headings was the general feeling that a number of people were not getting

down to work and applying themselves to the task of the conference. Perhaps a sharper definition of the task force assignments at an earlier time would also have helped to alleviate this problem.

We were aware, in addition, that not enough time had been set aside at the end of the conference for critique and synthesis of the task force products. This problem was heightened by the fact that a number of people had to leave early to catch their flights for home, but this type of problem is one which should be taken into account in the design of any conference of this size.

The headings "other" in Table III.6 include all the activities which were each mentioned by only one participant as occupying either too much or too little time. They included such things as the desire for more process discussion, interaction with conference principals and interaction with people who were working in other groups; and the desire for less of an "NTL" type approach and of moving around from large to small groups.

D. Post-Conference Action Possibilities

1. *New Ideas for Action*

Though the purpose of CECAT was to help us to arrive at designs for the training of change agents, we felt the conference would have achieved something else of importance as well if it had helped the participants to arrive at new ideas or approaches which they could use in their own work. We asked the participants if this were the case and also whether or not they thought these ideas could be implemented and whether they would make an effort to do so. The responses to these questions are given in Table III.7.

[Insert Table III.7 here]

These responses are certainly most encouraging; the conference evidently yielded a wealth of ideas and, most significantly, participants are apparently eager to follow through on them. In fact a number of people plan to make an effort to utilize their new ideas even though the resources to do so are not available to them at the present time.

The particular nature of the new ideas and approaches which participants derived from the conference are summarized in Table III.8.

[Insert Table III.8 here]

Two task force groups in particular inspired the bulk of ideas related to task force products. About 77% of those who stated that their new ideas were related to task force products mentioned the training programs designed by the groups working on the "macro-system" and the "change-through-crisis" approaches. As well as being a source of ideas for those working in these groups, these two products were the only ones cited by others as being the primary source of their new ideas.

nature of the event should depend on its intent; for instance, one participant who was interested in implementing the training design produced by the group working on a "macrosystems" approach felt this end might best be met by scheduling a series of meetings with key personnel in various government and educational agencies rather than holding one large conference.

For the most part, however, participants' suggestions were concerned with how to design a conference similar to CECAT, and these proposals tie in very closely with the evaluation of CECAT activities described above. The suggestion most commonly made was that only those who were truly dedicated to the outcomes of the conference should be invited. Related to this point were recommendations that there should be fewer participants, that these participants should take more of a part in preparing for the conference, and that the conference should be more structured around the goals desired. It was also felt that task force work should be started sooner and that more time should be devoted to total-group discussions in order to provide cross-fertilization of ideas.

All in all, we find that, by the close of CECAT, participants felt very stimulated and highly motivated to work, but they also felt frustrated by the small amount of time available to them to produce what they considered to be quality products. They would like to meet again to follow through on the ideas inspired by CECAT, but they would like to put more effort into pre-conference preparation so that they could get down to the work of the conference as soon as it convened.

We feel certain that on their own many participants will make use of the ideas generated by CECAT, but we also feel frustrated that, outside of holding another conference, we have no device for drawing on the collective talents of the highly motivated and creative CECAT participants who are now scattered around the country. We are not alone in this sentiment: one participant remarked "I would like to be able to tap a group like this for help in meeting our training needs. Perhaps some of the inventiveness possessed by members of the group could be used to invent a process for a productive continuing relationship."

E. Future Need of Conference Related Materials

The first set of questions on our CECAT evaluation form dealt with how useful the participants had found the background readings to be in preparing for this conference. We were also interested as well, however, in finding out how useful the participants felt the conference materials would prove to be in the future in their own work. Our final question asked for this information; the responses are given in Table III.9.

[Insert Table III.9 here]

We were pleased not only with the very positive response to the "Guide" and to PLANNING FOR INNOVATION, but also with the extremely high interest shown in obtaining copies of the CECAT proceedings. Perhaps this response indicates more clearly than any other that the participants felt the conference had produced valuable results.

TABLE III.7

Evaluation of Post-Conference Possibilities: New Ideas for Action
Percent Ratings and Mean Ratings*

	Number who responded to this item	Percent Ratings						Total	Mean ** Ratings
		6	5	4	3	2	1		
Did the conference help you arrive at any new ideas for action you could take or approaches you could try in your work?	39	Definitely 55.1	19.2	16.7	3.8	2.6	Not Really 2.6	100	5.1
In your opinion would it be possible to implement these ideas under existing conditions?	37	I could implement them 29.7	27.0	18.9	13.5	5.4	Resources not available 5.4	100	4.5
What do you think the chances are that you will actually try to follow through on any of these ideas?	36	Really expect I'll try 55.6	31.9	9.7	2.8	0	Really doubt I'll try 0	100	5.4

*Percents and means are based on the number who responded to each item.

** 6 = "Definitely"; "I could implement them"; "Really expect I'll try."

1 = "Not really"; "Resources not available"; "Really doubt I'll try."

TABLE III.8

Nature of New Ideas and Approaches
Percent Ratings

<u>Nature of New Ideas and Approaches</u>	<u>Percent*</u>
<u>Ideas: Related to task force products:</u>	
Own task force (33.3%)	} 43.3
Other task forces (10.0%)	
<u>Ideas: New insights about the process of change</u>	20.0
<u>Printed Resources: Found out about new materials</u>	
to use:	
Havelock materials (6.7%)	} 13.3
Materials from other colleagues (6.7%)	
<u>Human Resources: Formed new interpersonal contacts</u>	6.7
<u>Skills Learned: Group interaction techniques;</u>	
How to set up a task force	6.7
<u>Other</u>	10.0
TOTAL	100

*Percents are based on the 30 participants who responded to this question.

Included in the "other" category of Table III.8 are some interesting by-products of the conference. For example, one participant stated that the conference had emphatically confirmed for him the validity of the approach of the program he is developing in his own work.

2. *Future Conference Possibilities*

Most participants felt the conference should be reconvened at some time within two years; 87.8% were in favor of this idea, while only 7.3% were opposed. The remaining 4.9% gave a conditional response, saying that it should be reconvened only if sufficient work were accomplished in the interim. Some of those who felt the conference should not be reconvened still said that they would come if it were; 92.7% of participants said they would attend if such an event were scheduled. Only 2.4% said they would not attend and again 4.9% said "maybe."

About two thirds of the participants had suggestions as to how such an event should differ from CECAT. Those who specified what the purpose of the conference should be felt that it should deal with implementation of the training designs produced by CECAT. Some people felt that the

TABLE III.9

Evaluation of Future Need for Conference
Related Materials
Percent Ratings*

	Number Re- sponding to this Item	Not Likely to have a Future Need	Might be Interested at some time	Definitely interested- I have peo- ple or events in mind	TOTAL
CECAT Proceed- ings (including Task Force Plans)	35	2.9	25.7	71.4	100
PLANNING FOR INNOVATION	33	0	48.5	51.5	100
GUIDE TO INNOVATION	33	0	45.5	54.5	100
MANAGING CHANGE (Rogers and Svenning)	29	17.2	41.4	41.4	100
"Doing Re- search for Change" (part of Watson re- port)	28	25.0	28.6	46.4	100

*Percents are based on the number who responded to each item.

Section III

APPENDIX A

CECAT Evaluation Form

CECAT EVALUATION

Name: _____

1. Background Readings

Background Reading				Value as background to this type conference						I would consider this a "must" item in the training of change agents
				Did not read	No Opinion	Not Very Useful	Somewhat Useful	Very Useful	Essential	
1.	PLANNING FOR INNOVATION Summary Chapter (11)									
	"	"	" Roles Chapter (7)							
	"	"	" Other Chapters							
2.	GUIDE TO INNOVATION: Introduction									
	"	"	" Case Studies							
	"	"	" "Stages" I-VI							
	"	"	" Appendix on Strategies							
	"	"	" on Information Sources							
	"	"	" Change Bibliography							
3.	MANAGING CHANGE (Rogers & Svenning)									
4.	USING RESEARCH FOR CHANGE (Watson)									
5.	THE PLANNING OF CHANGE (Bennis, Benne, and Chin)									
Indicate sections or articles read if any.										

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6. Do you have any additional reactions or comments on background readings?

7. In designing a training workshop, what reading materials would you take off this list?

8. What other readings would you add?

11. Printed Conference Materials:

A number of handouts were especially prepared for CECAT. Which ones turned out to be useful in facilitating conference work?

	No Opinion	Not Very Useful	Somewhat Useful	Very Useful	Essential
1. List of statements about <u>change process</u> from Chapter 11 (used as basis of Monday's discussions)					
2. List of statements about training (by Chic Jung) (used as basis of Tuesday's A.M. discussions)					
3. Listing of additional points made by participants prior to conference					
4. Letters and other descriptive materials from CECAT					
5. Other (specify): _____ _____ _____ _____					

6. Additional comments on Conference materials:

III. Conference Activities:

How satisfied were you with each of the major elements of the conference?
Add comments to each item as you feel necessary.

	Very Dissatis- fied	Somewhat Dissatis- fied	Somewhat Satisfied	Quite Satisfied	Very Satisfied	One of best I have attended
1. Conference as a whole. _____ _____ _____						
2. Design of Conference _____ _____ _____						
3. Orientation: Monday 9 a.m. _____ _____ _____						
4. Change Process Group Discussion on Monday _____ _____ _____						
5. Group summaries on Monday (during cocktail hour) _____ _____ _____						
6. Monday Evening Session (if held) _____ _____ _____						
7. Tuesday 9 a.m. panel on training _____ _____ _____						

IV. Post-Conference Action Possibilities:

1. Did the conference help you arrive at any new ideas for action you could take or approaches you could try in your work?

definitely

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

not really

Briefly describe any such ideas you did get? (If these ideas are related to Task Force products, indicate which Task Force and how related.)

2. In your opinion, would it be possible to implement these ideas under existing conditions?

I (we) could implement them under existing conditions.

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

it would take resources, skills or money not available to me (us)

3. What do you think the chances are that you will actually try to follow through on any of the ideas you listed in Question IV-1.

really doubt I'll try

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

really expect I'll try

4. In your opinion, should this conference be reconvened at some time in the next two years?

Yes _____

No _____

5. Would you participate in such an event if it were held?

Yes _____

No _____

6. In what ways should such an event differ from CECAT? (Please answer on back side.)

Conference Activities, continued

	Very Dissatis- fied	Somewhat Dissatis- fied	Somewhat Satisfied	Quite Satisfied	Very Satisfied	One of best I have attended
8. Training Statements Group Discussion on Tuesday _____ _____ _____						
9. Group Summaries on Tuesday (during cocktails) _____ _____ _____						
10. Your Task Force and its product _____ _____ _____						
11. The other Task Force products _____ _____ _____						
12. Discussion and critique of Task Force products _____ _____ _____						
13. Implementation and follow- through discussion _____ _____ _____						

Conference Activities, continued	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Quite Satisfied	Very Satisfied	One of best I have attended
14. Conference Site _____ _____ _____						
15. Opportunities for informal discussions _____ _____ _____						
16. Your own contribution _____ _____ _____						

17. What specific part of the conference did you find most MEANINGFUL? (Please specify kind of activity and content.)

18. What part did you LEARN THE MOST from (kind of activity and content)?

19. Anything you would have like to have done more of:

20. Anything you would have like to have done less of:

V. Future Need of Conference Related Materials

All of the materials provided for CECAT in addition to the CECAT proceedings will be available in quantity for future use in training activities. We would like to have your estimate of possible future use by you or the organization you represent. For non-Michigan products we will relay the information you provide.

	Not likely to have a future need for this.	Might be interested in additional copies at some time.	Definitely Interested: I have people and/or events in mind. (Indicate approx. number of copies if possible.)	I will be ready to order as soon as they are available. (Indicate number of copies.)	This and I will like to have this book
CECAT Proceedings (Including the Task Force Plans and pre-Conference feedback)					
PLANNING FOR INNOVATION (\$8.00 per copy)					
GUIDE TO INNOVATION (\$3.00 per copy)					
MANAGING CHANGE (Rogers and Svenning - \$1.00 per copy from PEP)					
DOING RESEARCH FOR CHANGE (Part of Watson Report which will be available soon)					
Other materials or books which came to your attention during our meetings. (Specify):					

Billing Address (if applicable):

BIBLIOGRAPHY

- Bennis, W.G.; Benne, K.D.; and Chin, R. (eds.)
THE PLANNING OF CHANGE, Second Edition, New York: Holt, Rinehart and Winston, 1969.
- Clark, David L. and Hopkins, John E.
PRELIMINARY ESTIMATES OF RESEARCH, DEVELOPMENT, AND DIFFUSION PERSONNEL REQUIRED IN EDUCATION 1971-72, Bloomington, Indiana: School of Education, Indiana University, September, 1966.
- Clark, David L. and Hopkins, John E.
PROJECT MEMORANDUM #1 - A LOGICAL STRUCTURE FOR VIEWING RESEARCH, DEVELOPMENT AND DIFFUSION ROLES IN EDUCATION, Bloomington, Indiana: Indiana University, CRP Project #X-022, April, 1966.
- Glaser, Edward M.
UTILIZATION OF APPLICABLE RESEARCH AND DEMONSTRATION RESULTS, Final Report to Vocational Rehabilitation Administration, Department of Health, Education and Welfare, Project RD-1263-G, March, 1967.
- Havelock, Ronald (in collaboration with Alan Guskin) and others
PLANNING FOR INNOVATION, Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, 1969.
- Hovland, Carl I.
"Effects of the Mass Media of Communication," in Lindzey, G. (ed.), HANDBOOK OF SOCIAL PSYCHOLOGY READING, Massachusetts: Addison-Wesley, 1954.
- Lippitt, Ronald and Fox, Robert
SOCIAL SCIENCE EDUCATION PROJECT, Cooperative Research Project #E-011, U.S. Office of Education, Ann Arbor, Michigan: Institute for Social Research, June, 1964.
- Lippitt, Ronald; Watson, Jeanne; and Westley, Bruce
THE DYNAMICS OF PLANNED CHANGE, New York: Harcourt, Brace and Company, Inc. 1958, 312 pp.
- Richland, Malcolm
FINAL REPORT: TRAVELING SEMINAR AND CONFERENCE FOR THE IMPLEMENTATION OF EDUCATIONAL INNOVATION, Santa Monica, California: Systems Development Corp., Technical Memorandum Series 2691, 1965, 140 pp.
- Rogers, Everett M.
DIFFUSION OF INNOVATIONS, New York: The Free Press of Glencoe, Inc., 1962, 367 pp.
- Rogers, Everett M. and Svenning, Lynne
MANAGING CHANGE, Report sponsored by the U.S. Office of Education, Department of Health, Education and Welfare for Operation PEP, Sept., 1969.

Shaevitz, M.; Barr, D.; Feinberg, S.; and Glendon, A.

A TRAINING PROGRAM FOR RESEARCH UTILIZERS: PHILOSOPHY, GOALS, AND METHODS.
Research project sponsored by U.S. Office of Education and the Department
of Health, Education and Welfare, Ann Arbor, Michigan: Center for Research
on Utilization of Scientific Knowledge, Institute for Social Research,
1968, 59 pp.

Stufflebeam, Daniel L.

PROPOSAL TO DESIGN NEW PATTERNS FOR TRAINING RESEARCH, DEVELOPMENT,
DEMONSTRATION/DISSEMINATION, AND EVALUATION PERSONNEL IN EDUCATION,
RFP No. 70-12, Columbus, Ohio: Evaluation Center, The Ohio State University,
Sept., 1970.

Watson, Goodwin

USING RESEARCH FOR CHANGE, Part of project under NIMH Contract No. HSM-
42-69-1, "Review of Literature on Research Implementation," Los Angeles,
California: Human Interaction Research Institute, 1969.

Woods, Thomas E.

THE ADMINISTRATION OF EDUCATIONAL INNOVATION, Eugene, Oregon: Bureau of
Educational Research, School of Education, University of Oregon, May, 1967,
61 pp.

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**CHANGING SCHOOLS: CASE STUDIES OF CHANGE-AGENT TEAMS
IN THREE SCHOOL SYSTEMS**

By
Max R. Goodson and Warren O. Hagstrom

**Report from the Project on Models
for Effecting Planned Educational Change**

**Max R. Goodson, Warren O. Hagstrom, and Burton W. Kreltlow
Principal Investigators**

**Wisconsin Research and Development
Center for Cognitive Learning
The University of Wisconsin
Madison, Wisconsin**

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ABSTRACT

This paper deals with an approach to school system change -- the establishment of a change agent team to plan for and manage specific changes and to facilitate and perpetuate an innovative climate. It presents case studies of change agent teams in three Wisconsin school systems. A model for change agent team planning and action -- problem diagnosis, strategy planning, strategy activation, and result evaluation -- is described. The activities of the teams and their colleagues are related, and an evaluation of the interventions based on systematic data is included. (Author)

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I The School System Approach

There are various approaches to change in a school system. A school building may become the target of change efforts as represented in the unitized school concept of the Wisconsin Research and Development Center, a teacher or administrator may be thought of as a change agent and be trained for such a role, or a planned change process may be initiated at the system level utilizing the largest conceivable organizational unit which contains a central office and operating schools as sub-components. The latter is the concept that the Planned Educational Change (PEC) staff offered to the cooperating systems.

The rationale of this approach has five elements: (1) it provides entry into a school system by an outside change-agent and research team as represented by the PEC staff; (2) it assumes the integrated character of a system embracing several components and avoids the problem of selecting one of the components for special treatment; (3) it maximizes the opportunities of inside personnel to determine priorities for change and to control the systematic development of subparts in accordance with such priorities; (4) it provides a greater chance for a school system to continue developmental processes after outside resources have been withdrawn, greater than if a miscellaneous group of teachers or administrators, or a building faculty represents the school system; and (5) it improves relationships among components and increases possibilities for each component to become a focus of attention. Prospects are then good that the improvement of interrelationships will lay the ground work for improving a component if and when it becomes the focus of attention.

This approach has at least two limitations. The starting point for change is far removed from the student for whom the system functions. Improved learning in the classroom represents the last event in a chain, if the improvement influence ever reaches there. There is also

the danger of spreading efforts thinly over a large operation. This can lead to tangible results only after a long time in contrast to the visible results that may come immediately through more concentrated efforts. The favorable points of the rationale outweighed its limitations in the judgment of PEC staff and a system approach was initiated.

Change-Agent Teams

A change agent is a person or group who works toward bringing about change. Whether school systems are aware of it or not, agents for change function in all systems. Various persons in diverse roles from the superintendent to a kindergarten pupil have a potential to change themselves and to create change in others. Persons have differing power and resources to act as a change force in a school system. A crucial distinction between the rules noted above and a designated change agent is self-awareness. It was assumed by the PEC staff that change agents who are cognizant of their resources and mission and appropriately authorized by those with system-wide decision-making responsibility are more effective in planning and managing a change process than persons or groups who are not aware of their potential as effectors of change. The role of expectation is also an important condition. Those who are expected to be change agents are more likely to perform appropriately.

Role of the Change Agent

Historically, the role of the change agent was prescribed and largely limited to the superintendent of the school system, although more recently administration theorists have sought to unfreeze this one-office-one-man

authoritarian approach. A recent study of the superintendency has concluded that variables related to the superintendent are most important in facilitating the adoption of educational innovations (Carlson, 1964).....

Data from the eight school system sample of the Wisconsin study indicate the important role the superintendent plays in influencing the determination of educational matters in general as well as the innovative process. To deny the superintendent his role as a change agent in the school system is unreal and unwise. But to look to him as the change agent leaves much to be desired. This implies that no one else on the staff has the interest and capabilities necessary to contribute innovatively and creatively to the system. While it is true that the superintendent and/or members of his staff should be included in the change-agent structure due to their key location in the decision-making apparatus and their broad view of the system, other personnel should also be included. Teachers, principals, and school board members should collaborate in change efforts utilizing their ideas and competencies, and requiring their linkage roles in the system. In the final analysis, the success of a change project will depend upon how well they and/or their peers plan and manage a process of change. This analysis led the PEC staff to the concept of a team designed for school system changing (Goodson and Hammes, 1968).

Criteria for Change-Agent Teams

Criteria (Goodson and Hammes, 1968) for change-agent team design were formulated as follows:

(1) Size. The size of a team should be large enough to utilize the potential of a variety of individuals representing a variety of roles in the system but small enough to be able to function as a face-to-face group. The ideal size would be from five to eight members.

(2) High Level Representation. The superintendent and/or his central office representatives should be members of the change-agent team. Such representation would ease legitimation problems of the team, provide the team with broad perspectives, and give a basis in reality for implementing its decisions.

(3) Vertical Role Representation. Principals, teachers, and school board members should be placed on change-agent teams. This would more readily insure divergent thinking in problem solving and provide necessary linkages in the system to aid innovative implementation.

These criteria along with a statement regarding the intended functions of a team were communicated to each superintendent of the schools considering a cooperative arrangement with the PEC staff of the Center. Two main functions were projected. One was that of assisting colleagues in developing and maintaining a climate in which change and innovation might flourish as a natural feature of system operations. The second was that of planning and managing specific changes which a system might need or desire.

Within these broad and pervasive functions more concrete and instrumental functions of the change-agent teams were described as follows: (1) To give attention to the school system as a whole and consider needed changes; (2) to plan and coordinate strategies at the system level for initiating and maintaining change processes; (3) to consult with central office colleagues and building faculty members concerning a particular change project and to consider the prevailing school system climate regarding needs and efforts in change and improvement, including resistances to change; (4) to become a resource to colleagues in planning and managing change activities.

Structure of Change-Agent Teams

Each of the three school systems comprising the case studies responded in a unique manner to the very general conditions of team design set forth by the PEC staff. System A created a team de novo of six (later expanded to eight), consisting of a school board member, Assistant Superintendent, Elementary and Junior High School principals, psychologist, and three teachers representing the Elementary, Junior, and Senior High School levels. System B modified a high school curriculum council composed of department chairmen. It was chaired by the system coordinator for instruction. An elementary school principal was added to make a group of 14 members. This structure was modified at a later date by the superintendent. System C used as its change-agent team an Improvement Committee that was already in existence and composed of the superintendent and two coordinators in addition to three principals, one in the high school and two in the elementary schools. This structure was later modified to include teachers and related teams in the building units. Each school system participated in three training sessions that were designed for team building purposes and which are briefly described in the following chapter.

II Interventions by the Planned Education Change Staff

Functions of PEC

The Planned Education Change (PEC) staff served two functions: (1) that of observation and analysis of the change process; (2) that of a consultant, offering human relations training and specific resource help, but not deliberately influencing the systems toward any particular innovations or procedures. In a memorandum to colleagues, a PEC staff member elaborated upon these goals as follows: "I see the project as creating self-renewing systems. My goal is primarily action with little research. I see the change team as being primarily concerned with changing the processes and structures of the school system rather than being responsible for any particular change. I want to stimulate the teams to think about structure, interpersonal and organizational problems—what is blocking innovation and how to get through or over blocks. Our inputs, to bring this about, would be human relations training, feedback, information about appropriate innovations, and constant stimulation of the team by us."

The operational scheme became that of the PEC staff working as a change agent with the teams of the three systems and the three teams in turn functioning as change agents within their respective systems. These operations evolved into a collaborative process with a reciprocal relationship between the University and the school systems and, to some extent, between the systems. Interpersonal and problem-solving processes (Dialogue-Inquiry-Action Model) used by the PEC team served as a model for the school system change-agent team which subsequently involved its colleagues in the same processes. Thus there was a mirroring or simulation of processes thought essential to creating changes with continuous and reciprocal feedback between colleagues, the change-agent team, and the PEC staff.

Style of Intervention

The style of intervention used by the PEC staff rests upon two basic considerations: One is the essential matter of trust and respect and the other is the use of the therapeutic model. A school system has an integrity that requires it to be respected ethically and factually by any agency that would offer changes to it. Educational changing involves consideration of the necessarily particularized conditions of a school system, i.e., size, location, socioeconomic status, etc. The PEC staff tried to be sensitive to these indigenous qualities and to respect the realities and the personalities involved.

Leonard Duhl (1967) has described the therapeutic model by drawing a parallel between the patient-therapist relationship and the processes involved "in getting people to change" or in "building new institutions and new ways of coping with problems at this very moment." He states: "When a patient comes to a therapist reporting a current crisis, he usually asks for help in reaching a certain goal. If the therapist were a planner, he would probably sit down and outline five steps for the patient to take. If, however, the therapist simply gives a patient five steps to follow, nothing will happen. He must initially teach the patient the step-by-step process of assimilating new information, of reconceptualizing the world, of looking toward generalized goals, and of thinking about how certain immediate steps may be directed toward these generalized goals."

The therapeutic model emphasizes autoplasmic development—growth from within the system. Development which characterizes the change process as originating outside the system and exerting influence from that position in modifying the inner workings of the system is described as alloplastic development.

A fuller view of the change process must consider that the autoplasmic and the alloplasmic are continuous and complimentary.¹ Both directions of development are involved in the therapeutic model but predominance is assigned to the autoplasmic, as indicated by Daniel Bell's (1967) elaboration upon the therapeutic model in the following: "... the therapeutic model has surprising relevance in many problem-solving situations, as sophisticated business managers, for example, might attest. Its simple caution is not to accept the situation as given or defined by the client, but to keep open a range of generalized goals. Individuals may define a problem in terms of the difficulties they encounter in reaching a solution, only to find on analysis that the problem has been falsely put or that some other problem is actually at stake. By emphasizing self-scrutiny, feedback, and re-evaluation of means and goals, the model by its simple common sense warns against the premature closure of a definition or the foreshortening of perspective" (p. 702). In relating to the change agents of the school systems, the PEC staff used the therapeutic model giving a decided emphasis to an autoplasmic development.

Goals of Human Development Laboratory Training

The PEC staff attempted to offer to the school systems training goals and designs consistent with the model described above. The training took the form of a Human Development Laboratory (originally named a Human Relations Workshop) that typically met for 16 hours on Friday and Saturday. Laboratory sessions were designed to help the participants develop their abilities in two areas: (1) interpersonal competencies that are involved in relating and communicating with others as well as understanding one's self and (2) competencies that are necessary for activating a problem-solving process (Dialogue-Inquiry-Action Model), including determination of priorities, the planning of strategies, the handling of data, and the use of external resources.

A goal of laboratory training is the acquisition of a sharpened diagnostic sensitivity. As an outcome, participants may become increasingly sensitive to key relationships among members of a group; to situations in which motivation of a member relates to his membership role; to ways in which group atmosphere influences group actions; to the nature of decision-making; and to points in group interaction where members can be helpful to others in reaching shared goals. A member may come to see more clearly

events which happen in a small group and how these events may be constructively influenced by his efforts. This relevant change in participant functioning may be described as growth in diagnostic sensitivity.

Another goal of laboratory training is the growth of self-awareness. The member has the opportunity to see himself as he is seen by others; to privately examine his motivation in the light of data provided by others; to compare his perception of an event with the diversity or the unanimity with which others view the same event; to compare his perceptions of other participants over a period of time; to become aware of his feelings under group pressure; and to become more aware of the roles he takes in a group. Thus the participant becomes more fully aware of what is happening in a here-and-now context. This learning may be described as an awareness of self and others.

A member is also able to practice and experiment with new ways of intervening in his relationships with others. Because of the norm of experimentation and the condition of safety, the member is encouraged to try new roles and styles of personal intervention. For example, a participant who generally initiates group activities may choose to offer support and harmony to the group and give others the opportunity to lead. This gives him new insights into ways in which he can function with others to diagnose the reality, sense problems and needs, and plan strategies for making changes in situations which are problematical for group members. In contrast to the typical school or home situation, the laboratory may become for its members an opportunity for free exploration and learning.

Another important goal of laboratory training is to afford an opportunity for participants to reassess and to modify appropriately their deep-seated dispositions and stereotypes toward groups and people. Attitudes which strongly affect human relations and the solution of problems and which frequently need examination and more understanding by group members have to do with such phenomena as:

Aggression	Hostility
Anxiety	Human Intimacy
Authority	Leadership
Communication	Personal Autonomy
failure and success	Rationality
Empathy	Resistance
Conflict	Spontaneity
Consensus	Sexuality
Freedom	Submissiveness

Viewed through stereotypes the human situation tends to be static, destructive, and fore-

boding. When stereotypes have been transformed into experience-validated concepts—for example, aggression-as-bad being changed into a necessary component (autonomy and spontaneity) of human learning—laboratory participation can bring a fresh perspective and more flexibility to human transactions and a new potential for constructive behavior. This transformation is illustrated by what a teacher reported after a training session: "The world including the teachers and pupils in my school look different to me. I can now count on them to be helpful for they empathize with me."

A laboratory training design is a set of related dialogue-inquiry-action sequences that participants and trainers activate and maintain during the course of a laboratory. Three elements are generally incorporated: (1) a basic group variously named "encounter," "sensitivity training," "T-group," or, as in the PEC experience, a "Dialogue" group (D); (2) focused or structured exercises; and (3) information-giving sessions in which models, theory, or knowledge are presented as economically as possible with the occasion referred to as a lecturette.

As indicated above, the human development laboratory is designed to help participants enhance and further develop two competencies—interpersonal and problem-solving. The discrete competencies (or components thereof) are always related in the functioning of a person and are conceptually brought together in the trilogy symbolized above: Dialogue-Inquiry-Action. A training sequence that influences both competencies may consist of two complementary phases with an interlude between Session I and Session II of approximately six weeks. This sequence is portrayed in Figure 1.

The design emphasizing interpersonal competencies is always antecedent to the second design concerned with problem-solving.

In terms of the outcome of laboratory training, a functional integration is sought so that the participant can use interpersonal and problem-solving competencies appropriately in dealing with a situation. One trainee described his experience with laboratory training and applied it to a school situation. He said: "I can now better sense when I should speak, when I should listen, when I should state alternatives or raise questions, and when I should press for action."

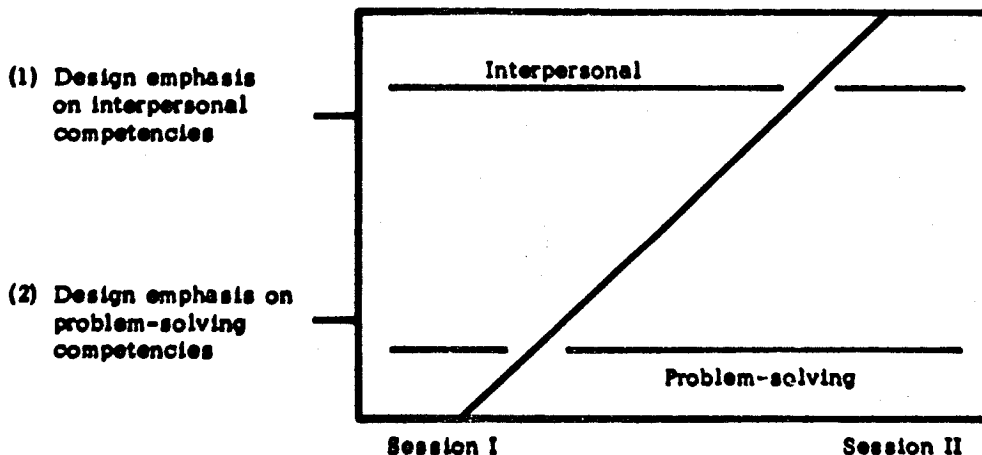


Figure 1

Concentration and Learning of Participant in Training Laboratory

The D-group provides a learning opportunity that is experienced intensely by participants. It becomes appropriate, if not a matter of felt necessity, for members of a training group to disclose themselves through overt actions and to receive feedback from other members. Senses and feelings become very much involved, highlighting the learning process that is proceeding for each member. The course of growth is the reversal of other methods, such as reading or lecture-listening, in that experience precedes conceptualization. Words and symbols become attached to events and summarize segments of experience. The use of symbols enriched by meaningful experience enables members to communicate, often at an abstract level, and reflect upon experiences in the training group. But when learning is taking place, the emphasis is upon the here-and-now and not upon something then-and-there which may be recognized and abstractly described.

Another important aspect of the training group is the behavior of the trainer. As an authority, an assumption made by members of the group, the trainer violates their ordinary expectations. He does not provide external structure; rather, members generate structure through attempts to influence one another on the basis of the needs and concepts they bring to the situation.

Three kinds of learning are available to a member of a training group: (1) He learns about himself, his own personal functioning; (2) He learns concepts regarding human relations as a field of knowledge, as well as the diagnostic and intervention competencies necessary for applying the concepts to concrete human situations; (3) He learns of the properties of groups and the dynamic character of the interactions among members.

When convened in a laboratory setting, members undergo the process of becoming a group in slow motion. Thus the stages of group development become clearly visible. An early and dramatic stage is represented by efforts of members to resolve the problem of authority—which member or members are to be granted the right to influence others in clarifying direction and goals and in establishing decision-making procedures. A latter stage of development involves the degree of closeness which members can extend to one another in sharing ideas and feelings. Other stages, less dramatic but just as important for the group, are made evident in the process of group development.

Members can observe almost minute-to-minute changes in the group and talk about them. The origin and history of the group

thereby becomes clear. By sharing observations and reporting their feelings, members can gain insight into group interaction. The meaning of the experience may be enhanced through collecting and analyzing information about each member and about movements of the group. (See D group exercise on pages 10 and 11 for facilitating such activity.) Meaning is enriched through sharing perceptions regarding attempts of members to influence one another.

The norms of trust and inquiry become important to the life of the group. For a group of trainees to realize their maximum potential, the culture of the group has to be transformed not only by the norm of trust, but also by the norm of inquiry. Then open communication among members and the full use of member resources of problem-solving become established. The norms of trust and inquiry need to be regenerated periodically and cannot be counted on to persevere from minute-to-minute or from hour-to-hour in the life of a group. The successful efforts of group members to generate trust and inquiry contribute to group development and the richness of learning for the members. When evaluating a laboratory session, one participant wrote: "Unless there is sincerity and trust, basic problems cannot be solved. These were generated during the session—we are now ready to begin."

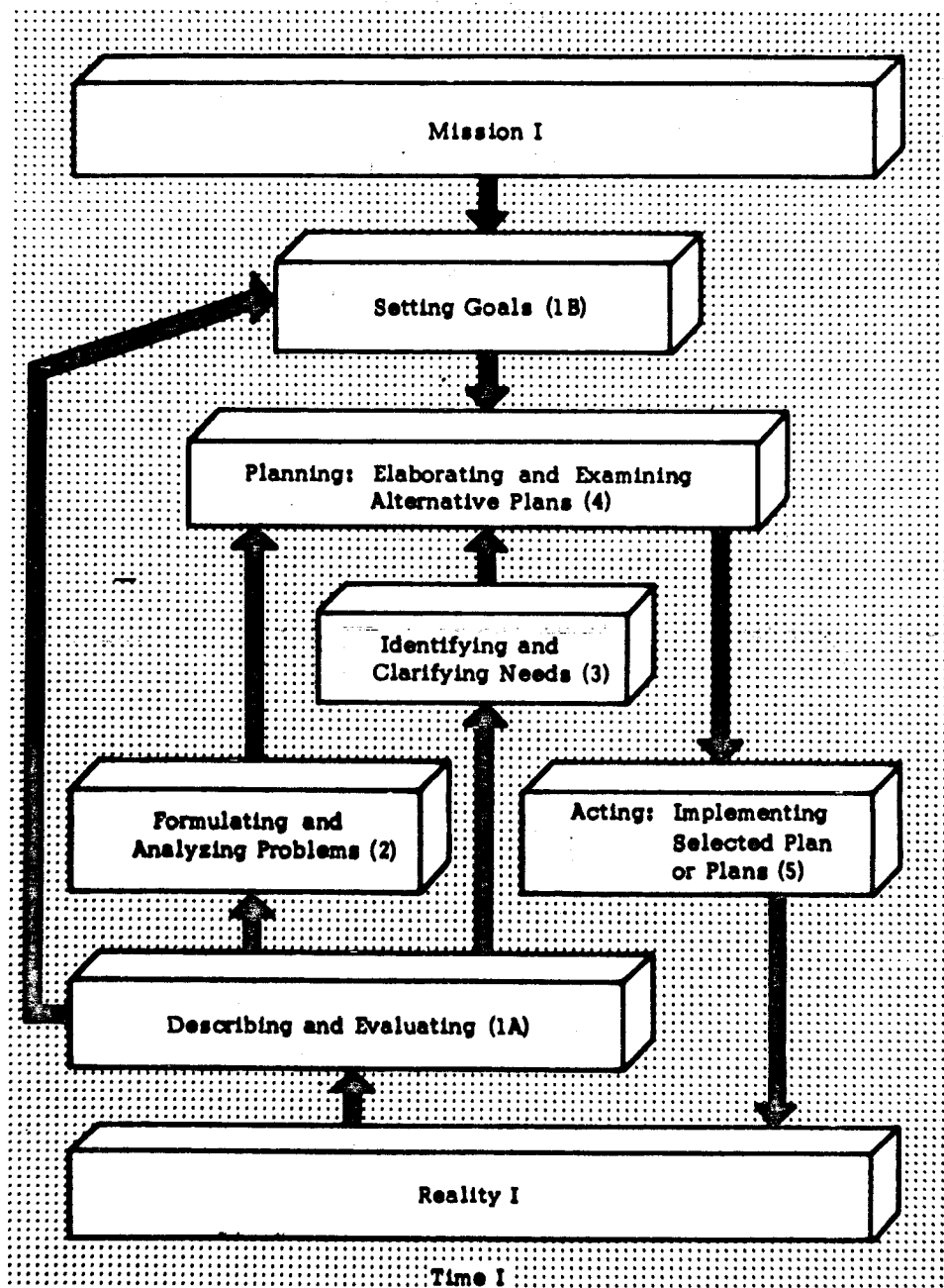
In the early stages of the life of a training group, members frequently feel that the processes they are undergoing are somehow special and artificial and are influenced by the special conditions under which the group meets and the "manipulative" behavior of the trainer. In time, however, members come to understand that these processes are somehow a part of all group life and that the similarities between the training group and the work organization of the school or the life of a family are greater than the differences. The phenomena that occur in the training group and those that occur in other groups are of the same order. The ideas and principles for understanding and acting in the training group are more similar than dissimilar to those that can be applied in other groups outside the laboratory. Unless the participant in training has strong needs to induce barriers to trust and inquiry in his interaction with others, transfer is easily achieved.

A Model for Planning and Action

In planning a laboratory design the PEC staff used the dialogue-inquiry-action model² which it recommended to change-agent teams

as a model for their behavior and as represented in Figures 2 and 3. Certain characteristics of the model need to be explained. An examination of Figure 2 shows that it is cyclical and sequential in nature. The process starts in

the reality of the school and proceeds step-by-step, box-by-box, and returns to the reality. The model relates the mission of the school to its realities and shows connecting functions, as represented by labels placed in



 Dialogue-Inquiry-Resolution

Figure 2
Dialogue-Inquiry-Action Model

the boxes. These are the mediating functions, according to the experiences gained in the PEC project, that a professional staff must perform and take responsibility for if a school is to improve.

The reality of a school is multiple. Parent expectations, interpersonal norms of the professional staff, behavior and goals of students, structures of the school, teacher and administrator competence, school climate and other conditions represent segments of reality that may need attention. Once a staff in a laboratory focuses attention upon a particular segment, both careful description and evaluation are needed. Dialogue and shared inquiry among members of a staff facilitate the description and evaluation of reality. The difference between describing reality and evaluating it is intricate. The latter involves the use of a value or a concept of "desirable condition" by which the problem-solver concludes that some aspect of reality needs to be changed.

The describing and evaluating of reality (phase 1A) leads to formulating and analyzing problems (2) and identifying and clarifying needs (3). Also, function 1A leads to setting goals (1B) in accordance with reality and consistent with the mission of the school (broad functions and responsibilities legitimized by societal representatives).

Planning (4): elaborating and examining alternative plans is a crucial component of the model. This function is related to the evaluation of reality through problems-to-be-solved and needs-to-be-satisfied as determined by participants in a laboratory who are involved in a school situation. It is the planning phase that innovations from R and D laboratories (and other sources) become relevant as alternatives to be examined in light of goals, problems and needs. The last phase (5) is acting in which selected plan or plans are implemented and is of great importance in determining the success or failure of the change process.

Another important feature of the model is that a white box containing a function is a figure upon a ground. The Gestalt or figure-ground is represented by a white box upon a finely dotted background. The ground is a primary dialogue-inquiry-action process. It is a basic process from which specific secondary functions emerge. Dialogue is interaction among professional colleagues (including students and parents)—a teacher talking to a principal or a group discussion among members of a change-agent team. It is from dialogue, facilitated by the interpersonal competencies of participants, that the specific functions contained in the labeled boxes are generated and given form and meaning. Dia-

logue activates inquiry. It enables group members to raise and answer questions and to state and consider alternatives regarding a specific function. Dialogue-inquiry terminates in a resolution—a decision or settlement so that motivation to go on can carry participants (change-agent team members, for instance) to the next function. The basic ground of dialogue-inquiry-action: (1) enlivens and nurtures a specific function giving it an organic quality and lending an artistry to the process and it does not degenerate into the "grinding-out of a machine," nor lose its life-like aspects; and (2) surrounds the consideration of each function and suffuses its creation with dialogue and inquiry, finally urging group members to reach a resolution point and to move on. Individuals in a professional staff solve problems differently. This model allows for different styles and approaches to problem-solving.

This basic ground may be conceptualized as the normative and motivational conditions of a school system. Previous studies of PEC project (Hilfiker, 1969) demonstrate a relationship between norms of trust, openness, adaptability, problem-solving adequacy, and the outcome of innovativeness. The intensity of these norms influence the behavior of participants in regard to the degree to which they participate in dialogue-inquiry-action processes. The norms, therefore, determine the dynamic characteristics of a school. Intensely positive feelings shared by participants about such norms enliven and nurture a specific function as indicated above. At an opposite extreme "hopeless" or "don't care" attitudes by teachers and administrators will not facilitate but rather depresses dialogue-inquiry-action.

Figure 3 represents Reality I at Time I and Reality II at Time II. In the second cycle with the expectation of an improvement in the process, the prior functions of describing and evaluating reality, acting, etc., need to be described and evaluated along with Reality II. If Reality II is the same in most respects as Reality I, then no change or improvement has been realized through the process. As differences between Reality I and Reality II are documented, the actor knows that changes have taken place. Whether or not changes represent improvements in the reality is obviously dependent upon evaluating—the deliberate process of examining reality in light of values.

Initially, the PEC staff carried the major responsibilities for designing and implementing Human Development laboratories. Later change-agent teams assumed an increasing responsibility in setting goals, describing and

diagnosing their school realities, formulating problems-to-be-solved, and identifying needs-to-be-satisfied through laboratory experiences. Change-agent team members shared with the PEC staff in the dialogue-inquiry-action process that provided a ground for each of the steps portrayed as figures on the ground (white boxes against finely dotted background) in Figures 2 and 3 of the model.

PEC and change-agent teams used the model described above in guiding their respective activities and in planning their cooperative activities. Thus, the model provided a reciprocal mirroring between the PEC staff problem-solving processes and those that change agents needed to institutionalize in their systems as robust processes of dialogue, inquiry, and action resolution. The PEC also needed continuous evaluation and feedback to reinforce its efforts to clarify and enhance its problem-solving processes, for it too faced the task of upgrading its performance.

Elements of Laboratory Training

Three elements were generally incorporated in laboratory designs. They included the Dialogue Groups described above, Focused or Structured Exercises, and Information-giving sessions. Examples of each will be given below.

Basic to Human Relations Laboratory Training was the formation of Dialogue (D) Groups. These are small subgroups of 9 to 12 members who are free to discuss any subject, including interpersonal problems, and give feedback to others concerning reactions and feelings. Exercises to facilitate interpersonal inquiry and self-disclosure for learning used with D Group members are included here:

D Groups

SELF-DESCRIPTION AND PREDICTION. Based on first impressions of people in the D Group and on their own experiences in groups, participants are asked to make predictions of their own behavior by responding to the following:

Select the person whom you feel will act most differently from you.

List words or phrases describing your predictions as to how he will behave.

List words or phrases which describe your predictions as to how you will behave.

GROUP INTERACTION PREDICTIONS. At the onset of the D Group activities members are asked to predict who will be high and low participators and who will be high- and low-influence members of the group. They are also asked who they feel will try to create a congenial atmosphere, who will create an atmosphere of disagreement, and who will try to create an atmosphere of calm and nonemotion within the D Group.

MEMBERSHIP EXERCISE. Participants are asked to look for certain behaviors during the D Group discussion and to respond to the following questions:

List members who tend to support one another.

List members who tend to oppose one another.

What members of the group seem to be most "in"?

What members of the group seem most "out"?

Under what conditions do people come into and move out of the group?

REACTION SCALE. During the D Group discussion participants are asked to respond to questions which include: To what extent are your opinions being solicited by the group? How satisfied do you feel with your participation in moving toward a decision? How much frustration do you feel as the work on the decision goes on? How good is the decision your group is making? Answers can vary in degree from completely satisfied to completely dissatisfied.

POSITIVE AND NEGATIVE ELEMENTS IN MY SELF IMAGE. All participants are given lists of 220 self-descriptive adjectives which include words such as: aggressive, caring, confident, dependable, lively, nervous, over-emotional, powerful, rationalizing, rigid, serious, strong, vulnerable, and zealous. From this list they choose three positive traits which they have and would like to retain and three negative traits which they also possess and which they would like to do away with. After

they have completed this by themselves each member selects a partner. The two exchange papers and together discuss the lists and the reasons for their choices. All participants are then reassembled and each person reports on his partner's lists. In this way, an individual reveals himself to one other person who then edits the findings and reports back to the group. Members of the group might ask questions, make comments, give suggestions, or agree or disagree with an individual's perceptions of himself.

Focused Exercises

Focused or structured exercises were also incorporated into Laboratory training sessions. Five of these exercises are included here:

LISTENING EXERCISE. Participants are grouped in triads and given 8-10 topics for discussion. (Topics might include school-related concerns such as: Today's students are given too much freedom; or More emphasis should be placed on Basic Skills in the Primary Grades.) In each triad one member acts as the mediator or evaluator and the other two discuss the topics. Roles are reversed after approximately 5 to 7 minutes of dialogue so each member is given the opportunity to be a participant and a mediator. The discussion is unstructured. Before a member may speak, however, he must summarize (in his own words) remarks made by the previous speaker, making it necessary for the participant to listen and comprehend as well as to speak.

NASA EXERCISE. Members are grouped in clusters of 6 to 10 people and asked to complete an individual worksheet determining priorities in the selection of items for survival on the moon. After individual sheets are completed, clusters meet together to determine priorities of their group. Consensus must be reached by members of the group to rank the items (Pfeiffer & Jones, 1969).

BROKEN SQUARE EXERCISE. Participants are divided into groups of 5. Each member is given an envelope containing pieces of cardboard for forming squares. The group task is to form 5 squares of equal size. During the exercise no member may speak. No member may ask another member for a card or in any way signal another member and ask for a card. Participants may, however, give cards to other members (Pfeiffer & Jones, 1969).

CONFLICT AND COLLABORATION EXERCISE.

Participants are divided into two groups and asked to determine solutions to a single problem. [The problem should be such that the groups will develop significantly different solutions.] The groups then choose representatives to describe their views and work out a common solution. Both groups are present when the discussion occurs but are on the opposite sides of a negotiations table. Each group can communicate with its representative by way of written messages. Inter-group competition generally develops quickly. If representatives are unable to agree, problem-solving suggestions are made to give practice in collaboration. The exercise points out the effects of conflict and of collaboration in resolving differences (Harrison, 1967).

TRAINING SESSION EVALUATION. Participants of training sessions respond to various evaluative instruments at the completion of the laboratory. Questions asked of group members include:

During the session my predominant feeling was one of being _____.

Regarding this session, I liked _____.

As a result of this session, my responsibility is _____.

Of most value to me during the session was _____.

Presentation of Concepts

Cognitive inputs were used by the PEC staff in the laboratory as needed. The presentations were designed to give the participants a language and concepts for understanding what they were experiencing. The basic rationale of laboratory training is to facilitate for the participant a better integration between his emotional experiences, his behavior or action, and his referential or cognitive processes. The following systems of ideas were used most frequently, either as a summarizing of an experience or for initiating a training experience, and are presented in abbreviated forms:

SELF DISCLOSURE AND FEEDBACK. (Johari Window) A process of learning for a member of a D Group is self-disclosure and feedback. This is probably the initial aspect of the training

experience. As a member discloses himself by self-references (feelings, self-concepts, etc.) he initiates a positive gain in self-awareness and effective participation. The consummation of the learning process comes through feedback from other group members (their responses to acts of self-referencing and disclosing). The process is diagrammed in Figure 4.

	Known to Self	Not Known to Self
Known to Others	Area of free activity - person uninhibited in public I	Blind area - person's behavior is beyond self-awareness but observed by others II
Not Known to Others	Private self-awareness area not readily shared with others III	Unexplored potential for growth available through fantasy exploration and other special efforts IV

Figure 4

Self-Disclosure and Feedback

Through acts of self-disclosure Area I becomes larger and Area II becomes smaller (see Figure 5).

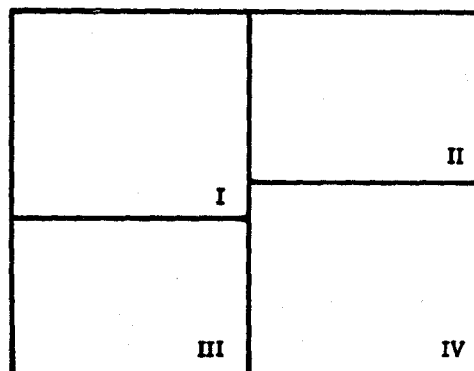


Figure 5
Self-Disclosure

Through acts of feedback from others that are accepted and assimilated by a person, Area I expands while Area II contracts (see Figure 6).

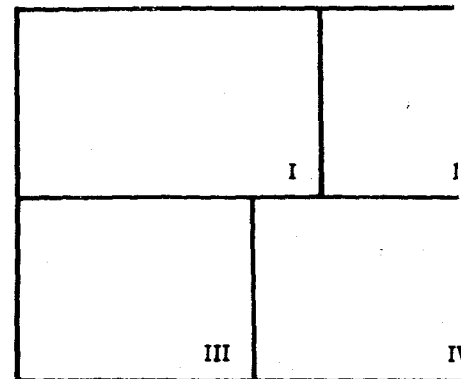


Figure 6
Feedback

Self-disclosure and feedback in combination consummate the learning sequence to maximize self-awareness (see Figure 7). Area I expands in two directions with a contraction of Areas II and III.

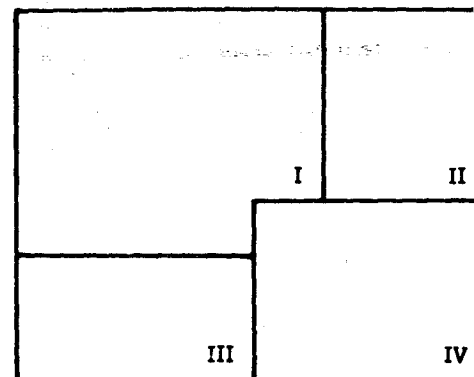


Figure 7
Self-Disclosure and Feedback

As illustrated in Figure 7, Area I may expand, facilitating more personal functioning through encroaching upon the encompassing Areas II and III. Area I may also expand into Area IV through activities of dream interpretation, fantasy explorations and similar activities. In accordance with the theory of becoming a fully functioning person Area I geometrically approaches the limits of the basic large square.

Criteria of Effective Feedback

During the initial stages and in later encounters, members of a D Group are likely to experience anxiety and feelings of ill-ease. Throughout the human career of each member, anxiety is to be expected and a person can learn to understand and cope constructively with it. As we have seen in the Self-disclosure and feedback abstract, feedback is an important condition of learning. It needs to be done as competently as possible. This means, among other things, that the anxiety-level of the receiving person is kept low, for anxiety contaminates and attenuates such critical processes as self-awareness, sensory acuity and discrimination, dialogue and inquiry—the very processes that the D Group is designed to enhance in the participant. Attention, therefore, needs to be given to the characteristics of constructive feedback as follows:

1. It is specific and not general;
2. It is tentative and not dogmatic;
3. It informs and does not order;
4. It describes behavior and one's perception of the behavior and does not generalize or categorize as good or bad;
5. It describes one's own feelings, underscoring the I-Thou relationship and avoiding the thingness connotation;
6. It is not name calling;
7. It does not accuse and impugn undesirable motives to the recipient.

Three Personal Styles and Social Interaction

It is postulated that there are three functional modalities that enable a person to perform a role in a social system—fighting, helping, and thinking. One modality may tend to dominate over the other two—thus Person 1 may tend to be a fighter; Person 2 a helper to others, while a third person may function predominantly as a thinker. These differences that give rise to personal styles may be illustrated as in Figure 8.

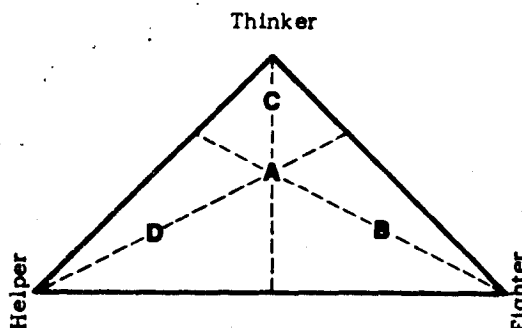


Figure 8
Three Different Modalities of
Human Functioning

A person in which the modalities are equally balanced would be at Position A, the fighter at B, thinker at C, and the helper at D. These modalities are related to certain properties as indicated in Table 1.

These three modalities or styles are all useful and contribute to group life and the culture of a school.

Members of a training group are able to divide themselves into the three categories through a non-verbal exercise. A person's self-perceptions may be challenged by the perceptions of others, inviting exploration of personal style and experimentation in a human development laboratory with the modalities in which the person does not ordinarily function. Triads for various training functions such as consultation-training that involves the roles of a consultant, consultee, and process observer may be composed of trainees differently categorized (one objective thinker, one tough battler and one friendly helper).

Dialogue-Inquiry-Action (Problem-Solving Model)

The content for this presentation is described on pages 6 - 10. The essential points are contained in Figures 1 and 2 and need elaboration. The model was used as orientation to problem-solving sessions. The experience of PEC staff indicates that the orientation to a sequential problem-solving process should be brief. The model may also be used effectively as a guide at certain junctures of the sequence, for example, when a group is moving from selecting a plan of action among alternatives to the implementation of the

Table 1
Modalities Related to Strategic Variables

	Fighter	Helper	Thinker
Emotions	(accepts aggression) rejects affection	accepts affection (rejects aggression)	rejects more than accepts both
Self-Ideal	To dominate	To be accepted	To be correct
Influences others by	Ordering	Understanding and friendship	Data and cor- rect inference
Judges others by	Power	Warmth	Thinking Ability
Value to (school organization)	Initiates, disciplines	Supports and harmonizes	Solves problems
Dislikes	Being soft	Conflict	Emotions and Irrationality
Needs	Warmth and objectivity	Integrity and firmness	Awareness of human beings

plan. Its most effective use, however, is in conceptualizing the process and inviting dialogue-inquiry regarding the process itself after participants have experienced the various steps as indicated in the white boxes (Figures 1 and 2).

Erikson's Eight Stages of the Life Cycle and Teacher Influence

Erikson's (1963) eight stages are presented indicating the virtuous outcome when the crisis resolution at each stage results in a "favorable ratio" (see table 2). Some speculative generalizations are useful in interpreting the ideas as follows:

1. Each stage may be redone in the recycling of the human career; for example, when an older person again works through the problem of "trust vs. mistrust" with a professional colleague.
2. Either growth that enables the person to "develop fully" in a stage and become "fully ready" for the next stage or developmental arrestation in some degree may occur at any stage. Growth or arrestation is determined by the educative forces in the person's environment.

3. Each stage has a potential of social contagion from one person to another through social contact. Mistrust breeds mistrust; for example, love breeds love, competence breeds competence, and stagnation breeds stagnation.

Members of the training groups participated in the following steps in an exercise after the lecturette:

1. Review the experiences you have had with teachers. Select one experience that you recall with pleasure and a sense of worthwhileness for your growth. Select another experience which you recall as being either frustrating or useless for your growth.
2. Describe the teacher who had a good influence upon you. Indicate critical interpersonal incidents you experienced.
3. Describe a teacher who had a frustrating or useless influence upon your growth. Indicate critical interpersonal incidents that happened.
4. In terms of Erikson's stages of development, in which development

Table 2
Erikson's Life Cycle

Stages	Character of Developmental Crisis	Outcome in Terms of "Virtuous" Personal Functioning
1. Oral-sensory	Trust vs. Mistrust	Hope
2. Muscular-anal	Autonomy vs. Shame and Doubt	Will power
3. Locomotor-genital	Initiative vs. Guilt	Purpose
4. Latency	Industry vs. Inferiority	Competence
5. Adolescent	Identity vs. Role Diffusion	Fidelity
6. Young Adult	Intimacy vs. Isolation	Love
7. Adulthood	Generativity vs. Stagnation	Care
8. Maturity	Ego Integrity vs. Despair	Wisdom

crisis were you involved with the positive teacher?

5. Which development crisis with the negative teacher?

6. Which development or crisis are you working on at the present? What are you doing about your own self-development?

In a dyad with a partner, mutually selected as nearly as possible, the participant shares his self-observations with another in sufficient depth of understanding that each can present the other's experiences to a group of six in the presence of his partner.

Jones' Propositions Regarding Creative Learning in Contrast with Anxiety

This presentation is designed to conceptualize various learning conditions that a participant may experience in a laboratory including the fortunate outcome of creative learning as well as the unfortunate outcome of anxiety. Jones (1968) states two equations that are useful in conceptualizing laboratory training and in understanding human processes that are also involved in the school. He postulates that learning starts with imagination and the outcome (whether creative learning or anxiety) of the process is determined by other factors, as indicated in Figure 9.

Laboratory learning and school instruction need to provide for community—the community

of feelings and ideas or dialogue among persons. Mastery of the situation in which the person finds himself as well as self-control are also important conditions. When community degenerates into a condition of human aloneness and mastery gives way to a sense of helplessness, the equation does not yield creative learning. Instead it produces anxiety which may be thought of as being in the professional domain of Psychotherapy and irrelevant to instruction in the school and human development laboratory training. The question is: How can educators be sensitive to aloneness and helplessness in one another and in students and convert the negative conditions into community and mastery so that improved competence in interpersonal relations and problem-solving is acquired? Only teachers and administrators who are competent interpersonally and can activate problem-solving processes can answer this question.

One other observation is useful. Jones' two propositions both are premised in imagination. There is a feedback as represented by the dotted line from anxiety to imagination in the one and from creative learning to imagination in the other. The constructive and humane characteristics of imagination will be reinforced and enhanced by creative learning and the human organization will be better for each instance in creative learning. The destructive and inhumane qualities that may be present in imagination will be reinforced and intensified through feedback from anxiety and the human organization will further deteriorate through a downward vicious circle.

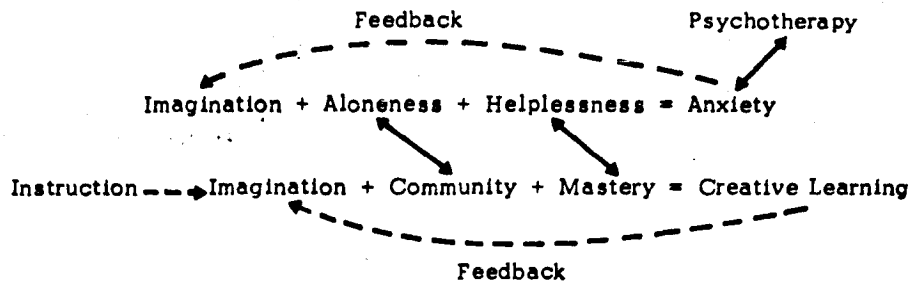


Figure 9

Jones' Formula Regarding Anxiety and Creativity

Data Feedback and Analysis

Another form of cognitive input in the laboratory was data feedback and analysis. A sample of data feedback provided by the PEC staff is included here. Some differences in the "climate" of the two high schools are suggested in terms of questionnaire responses by eleventh graders.

1. Almost half the boys at School A have been sent out of class by a teacher more than once, as against only 11 percent of those at School B.
2. A much larger proportion of the boys at School A than at School B have skipped school with a gang of kids more than once.

3. Boys as well as girls at School B are more likely to rank being "bright, well-informed, and interesting" as very important for themselves than boys and girls at School A.

4. Girls at School B are more likely to place great importance on family background than those at School A.

In sum, these few items suggest that the "student culture" at School B is more favorable to learning and academic matters than the "student culture" at School A. What can we do about it? These climates tend to be self-perpetuating; to some extent they are based on the neighborhoods from which the students come, to some extent new students acquire values from old students. What can the school staff do to change the climate in School A for the better?

III

Activities of the Change-Agent Team and Colleagues

Change-Agent Team Training Sessions

Each of the three Change-Agent Teams working with the PEC Staff had a two-fold function which included providing a climate for change within the school system, and determining, planning, and managing specific changes. After the formation of the teams, work began with a series of training sessions which all three teams attended jointly. The first of these meetings was held in Spring 1967. The major goal of this session, planned by the PEC Staff, was the improvement of the functioning of Change-Agent Teams through Human Relations Training. Participants came to the session prepared for a typical in-service or conference experience and expected lectures concerning team functioning and opportunities to meet and work on their problems. When this did not occur many participants became confused and uncomfortable. A member of one of the Change-Agent Teams evaluated the session as follows: "After the initial shock of being exposed to this type of training, I feel much can be accomplished." Another stated: "If I had this to do over, I would have stayed home." While a third participant responded: "It was a new experience for me to explore this technique. I was amazed at the evolving structure of the various groups, and the patterns that I observed and even the evident change in some of the personalities. I believe that I have profited from this experience and trust that I will be able to carry over what I have learned into all my future meetings." Even 2 years later when members of Change-Agent Teams were planning Human Relations Laboratories for others they sometimes referred to the confusion and distrust that was felt when they first participated in these sessions.

Most of the initial Human Relations Laboratories in which members of the Change-Agent Teams participated combined process and task

orientations, although one or the other usually predominated. For example, one of the initial sessions began with members of all three system teams meeting as D Groups. These are unstructured groups in which members are free to discuss any subject they choose. They usually work on interpersonal problems and give feedback to each other concerning reactions. Following this, members of the separate teams met together in a new D Group situation across system teams. After some time they stopped to analyze what they had learned about each other and how it affected their work as a team. Later in the day each team worked together on a task while the other teams watched to see how the group functioned and made suggestions as to how the team could work together more effectively. Finally there was a time when each team worked on their problem only, using a force field analysis, a problem-solving technique wherein forces, both positive and negative, affecting the task are diagrammed and weighted. In this Laboratory Training Session both the problem (the way the team worked together) and the task (the problem they worked on) were attended to.

The training design for one of these laboratories is included.

Change-Agent Teams

Participants were members of Change-Agent Teams from Systems A, B, and C.

Goals

1. Each member will identify self-learning goals in relation to improving team functioning.
2. Each team will evaluate itself in relation to group maturity criteria.

3. Each group will outline concrete action-steps for problem-solving.

4. Each team will consider data feedback in relation to its problem-solving efforts.

Training Design

Morning	Afternoon	Evening
1. Identification of self-learning goals	4. Group Maturity Assessment	Diagnosis and discussion of Group Maturity Assessment
2. Triad Discussion Theory session on Personal Styles and Group Process		
3. Personal Styles and Group Process Triad and Change-Agent Team Discussions		
Morning	Afternoon	
5. Resource Utilization	Data Feedback (by PEC Staff)	
6. Change-Agent Team Planning	Analysis of Data Postmeeting Reactions	

Activities

IDENTIFICATION OF SELF-LEARNING GOALS. Each member of the group was asked to complete the following:

1. Describe the changes you would like to create or the behavior you would like to experiment with.
2. Describe two members of your Change-Agent Team who come the closest to each

change which you would like to create or behavior you would like to experiment with.

TRIAD DISCUSSION. Using the self-learning goals developed by participants as a basis for discussion, each member of the triad performed on a rotation basis in three roles: (1) consultante, (2) consultant, and (3) observer and analyzer—stimulator of process.

PERSONAL STYLES AND GROUP PROCESS EXERCISE. Each individual determined his personality type: tough battler, friendly helper, or objective thinker. Triad discussions and Change-Agent Team discussions concerning the individual's perception of himself and his relation to the three personality types, and the triad members or group's perception of the individual followed.

GROUP MATURITY ASSESSMENT. Each Change-Agent Team was assigned one of three topics for discussion which included innovations, educational goals, and local problems. A rating form was filled out by two teams who observed the third team. The observed team did a final self-rating after the observation. Several questions included on the Rating Scale are listed below.

1. Do most people in the group feel free to participate in the discussion?
2. Does the group find and use its "experts"?
3. Do group members seem to work well together?
4. Does the group seem to care about the personal feelings of its separate members?
5. Do group members listen to what other members say?
6. Does the group sense the needs and styles of the members?

RESOURCE UTILIZATION EXERCISE. The NASA exercise was used to point out the need for utilizing all available resources in the decision-making process.

CHANGE-AGENT TEAM PLANNING. Criteria established by the PEC Staff for Change-Agent Team planning included:

1. Evaluate your team's progress.
2. Outline concrete action steps.

3. Place action steps in sequence.
4. Plan a timetable for the completion of each step.

Goals of additional laboratory training sessions planned for Change-Agent Team members included: Relating sensitivity training to the functioning of Change-Agent Teams as back home groups, learning and utilizing problem-solving techniques, and providing additional information regarding system problems through the use of data feedback. By the fourth session in which Change-Agent Teams participated, members had accepted and become enthusiastic about the laboratories and the results of training.

During this period Change-Agent Teams were asked to decide on an innovation which they would introduce into their respective school systems. The PEC Staff provided criteria for choosing an innovation as follows:

1. Has your Change-Agent Team developed an operational definition of an innovation or change?
2. Has your Change-Agent Team developed a priority of changes or innovations which you feel are relevant and desirable locally?
3. Which of the Innovation-Changes can be processed through your Change-Agent Team?
4. What levels of decision-making will need to be utilized in processing the Innovation-Change: teachers, administrators, school board members, or the electorate?
5. What limiting variables need to be considered before the final selection of the Innovation-Change? Variables in this category might include some of the following:
 - a. Time necessary to establish the Innovation-Change.
 - b. Human resource: time and energy needed.
 - c. Projected cost of the Innovation-Change.
 - d. System "climate" for change.
 - e. Complexity of the Innovation-Change.
 - f. Degree to which system must adjust its existing patterns, norms, etc.

Using these criteria, System A chose to work on the introduction of Independent Study, System B selected Modular Scheduling and Independent Study, and System C began the formulation of a Philosophy of Education for the system.

The Change-Agent Teams also met regularly and independent of PEC in their respective school systems. Each of their meetings was tape-recorded and the tapes were analyzed by members of the PEC Staff. Through this analysis it was possible to see effects of Human Relations Laboratory Training and to note the progress of each group. Although each Change-Agent Team was given identical Laboratory experiences, participated in sessions involving Human Relations and Problem-Solving areas, and was given the same criteria for selecting an innovation or change to be introduced in their respective systems, it can be seen that each team had diverse characteristics, goals, and problems.

System A

System A, the largest of the three systems studied, employs approximately 500 professional workers and has two high schools. The system, like the city in which it is located, is generally considered conservative and somewhat slow to change, but has the reputation of being a solid system. In general, while innovations are introduced, they tend to be carried on in a few schools as pilot projects and their spread is slow. In the study involving eight school systems done in 1967, School System A ranked sixth in innovativeness (Hilfiker, 1969). The city itself, which is a small manufacturing community, is growing but is doing so at a slower rate than many other cities in the state. Some of its major industries are spreading elsewhere. In the immediate perspective, stability is perhaps the word that describes both the city and the system best.

The Change-Agent Team in System A began with six members selected by the Superintendent. The group included a school board member, an Assistant Superintendent, a school psychologist, two principals, and a junior high school teacher. During the first year of the project the members of the team felt that more teacher representation was desirable and included an elementary teacher and a senior high school teacher on the team. This group chose the introduction of Independent Study as its goal. This project, aimed at assisting teachers to provide opportunities for students

to progress at their own rates and to adapt instruction to individual differences, was begun at the elementary level. Approximately twenty teachers and administrators from three of the system's elementary schools were initial participants. They attended two sessions planned by the PEC Staff and the Change-Agent Team involving interpersonal relations, communication, problem solving, and an introduction to Independent Study. The format used for the Problem Solving Session is included.

Problem-Solving Session

Participants were 20 elementary teachers, 2 elementary principals, and the Change-Agent Team.

Goals

1. To identify and practice steps in problem-solving.
2. To plan future action through problem-solving.
3. To make plans to implement independent study procedures.

Training Design

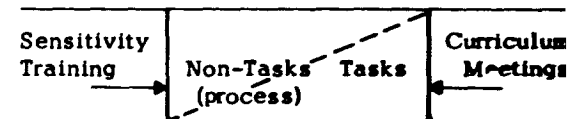
Morning	Afternoon	Evening
1. Group Expectations	Independent Study Problem Analysis (Building Groups)	Re-examination of Force Field Analysis
2. Problem-Solving Session Described	Large Group Discussion of Force Field Analyses	Plan Change and Action Strategies
3. Non-Verbal Sequence	7. Open-Ended Sentences	Discussion of Action Strategies
4. Triad Discussion Role Playing Independent Study—defined		Evaluation of the Session
5. Individual Analysis of Problems (Organizational and Personal-Professional) Triads		
6. Description of Force Field Analysis		

Activities

GROUP EXPECTATIONS. Feelings about the session were discussed by participants. Each member of the group wrote down one word describing his expectations for the session. These were referred to and analyzed by participants.

PROBLEM-SOLVING SESSION. Human Development Laboratory Training provided by the PEC Staff was concerned with two types of activities: process (human relations training) and task doing (planning for the introduction of changes within the school system). A problem-solving session combined both process and task doing activities (see Figure 10).

Problem-Solving Session (Interpersonal Emphasis)



Problem-Solving Session (Task-Doing Emphasis)

Figure 10

Integration of Process and Task

NON-VERBAL SEQUENCE. This was used as an opening exercise. Participants expressed feelings without verbalization and later discussed these feelings with others. This sequence included: walking without greeting others, greeting others non-verbally without physical contact, greeting others with physical contact, choosing a partner, communicating with the partner without words, and a subsequent discussion of the exercise.

TRIAD DISCUSSION—ROLE PLAYING. One person for independent study, one against it, and one with neutral feelings formed triad discussion groups. Members took opposite roles in convincing members of the triad about independent study. The neutral member acted as an observer and clarified topics which were discussed.

INDIVIDUAL ANALYSIS OF PROBLEMS. Each participant spent some time listing problems which would be encountered in the school system when introducing independent study

procedures and then listed individual problems which would be met when implementing this innovation. A subsequent discussion of these problems was held in triad groups.

FORCE FIELD ANALYSIS. This procedure requires the identification of positive and negative forces which tend to push toward or against a particular goal [in this situation, independent study], diagnosing the problem situation, considering action alternatives, trying out the action plan, and finally diffusing and adapting the plan. One force field analysis developed at the session is included here.

INDEPENDENT STUDY. Work by individual students in which they define their own learning goals on the basis of felt needs and study in areas with teacher guidance, much of which would be in a consultative capacity.

<u>Negative Forces</u>	<u>Positive Forces</u>
1. Rigidity of the "System"	1. Change-Agent Team
2. Lack of knowledge concerning Independent Study procedures	2. Possibility of in-service training and visits to see models of independent study
3. Teacher resistance to change	3. Administrative and teacher enthusiasm
4. Parental resistance to change	4. Parent involvement programs
5. Student resistance to change	5. Student enthusiasm
6. Lack of equipment and supplies	6. Possibility of more teacher sharing and better use of library facilities
7. Lack of teacher time	

OPEN-ENDED SENTENCES. Each participant completed the following sentences:

I feel a sense of helplessness when _____.

A child in my class feels powerless when _____.

Members of the group then found a partner whom they felt would have different answers than they and discussed the sentences.

This group and the Change-Agent Team continued to participate in planning and evaluating meetings in an attempt to develop the use of more Independent Study procedures within the school system.

Administrators and Guidance Personnel of this system were also involved in a series of Human Development Laboratories planned by the Change-Agent Team and the PEC Staff. These sessions were aimed primarily at improving communications and problem-solving skills and in developing a commitment to desirable change among participants.

During one of the administrative sessions a problem concerning curriculum development was identified and a force field analysis developed. It is included here.

PROBLEM. How can we best organize to meet the needs of the curriculum?

1. Possibility of employing a Director of Elementary Education and a Director of Secondary Education. This would provide:

- Greater involvement of teachers with additional personnel.
- More positive forces (continued coordination and flexibility of classroom instruction).
- Coordination of elementary, junior, and senior high school programs.
- Teacher in-service training strengthened.
 - released time
 - para-professionals
 - resource persons and consultants
 - clarification of total program

Negative Forces

- Lack of instructional personnel
- Special area supervisors may get too involved in their own areas
- Lack of overall understanding of the total program

Participants (central office staff, principals, teachers, and CAT) at the session discussed this problem and the force field analysis. It was decided to ask the school board to create the two new positions. This was done; job descriptions were written and the central office staff in School System A now includes a Director of Elementary Education and a Director of Secondary Education.

In addition, approximately 40 participants including the entire Guidance Staff, several teachers and administrators, and the Change Agent Team attended the two Human Relations Laboratories planned for Guidance Personnel in the school system.

Since the beginning of the Planned Change Project 69 people have received a total of 3536 training hours in System A (see figure 11). A 2-day planning session was held by the Change Agent Team at the end of the school year to determine goals for 1969-70 which included planning for Human Development Laboratory Training for additional 70 teachers interested in Independent Study and developing a budget to be incorporated in the budget of the school system.

During this time the Change-Agent Team in System A evaluated the Planned Change Project in this manner:

"In accord with the objectives of the project our Change-Agent Team has undergone a series of training sessions in Human Relations and Problem Solving areas, has determined educational needs within the school system, and has begun to introduce a particular innovation—Independent Study—into the schools. This has been done by determining where and with whom the innovation should be introduced and by re-educating personnel of the system through sensitivity training, in-service sessions, observations, and planned meetings.

"Of particular value to the Change-Agent Team during the three years of involvement in the project has been: (1) consultant services of members of the PEC staff; (2) the makeup, continuing membership, stability and increased maturity of the Change-Agent Team which has made this group more effective; (3) Human Development Laboratory Training which has promoted positive change in attitudes on the part of educators involved; and (4) enthusiasm and interest shown by members of elementary schools involved in the Independent Study projects.

"Negative aspects of the project as seen by the Change-Agent Team include: (1) limited use of feedback from data collections; (2) lack of time had by members of the Change-Agent Team (a great deal of time and planning is needed to effect worthwhile changes); (3) resistance to change by some professional educators.

"The Change-Agent Team believes that Human Development Laboratory Training has resulted in an increasing sense of trust and respect within the school system and that additional sessions should be conducted under the direction of trained leaders. It also feels that this project should be continued and the

members of the PEC Staff should be maintained as consultants. The focus must now be on our school system, however, and the Change-Agent Team must make decisions and move out on its own."

The makeup, continuing membership, and training of the Change-Agent Team in this school system proved advantageous to the project as did the obvious support of the Superintendent of Schools, the approval of the Board of Education, the guidance of the PEC Staff and the enthusiasm and support of those who participated in Human Development Laboratories. Size of the school system and the lack of time to plan and implement change seemed to be the major obstacles to the attainment of the specified goals of this team.

System A

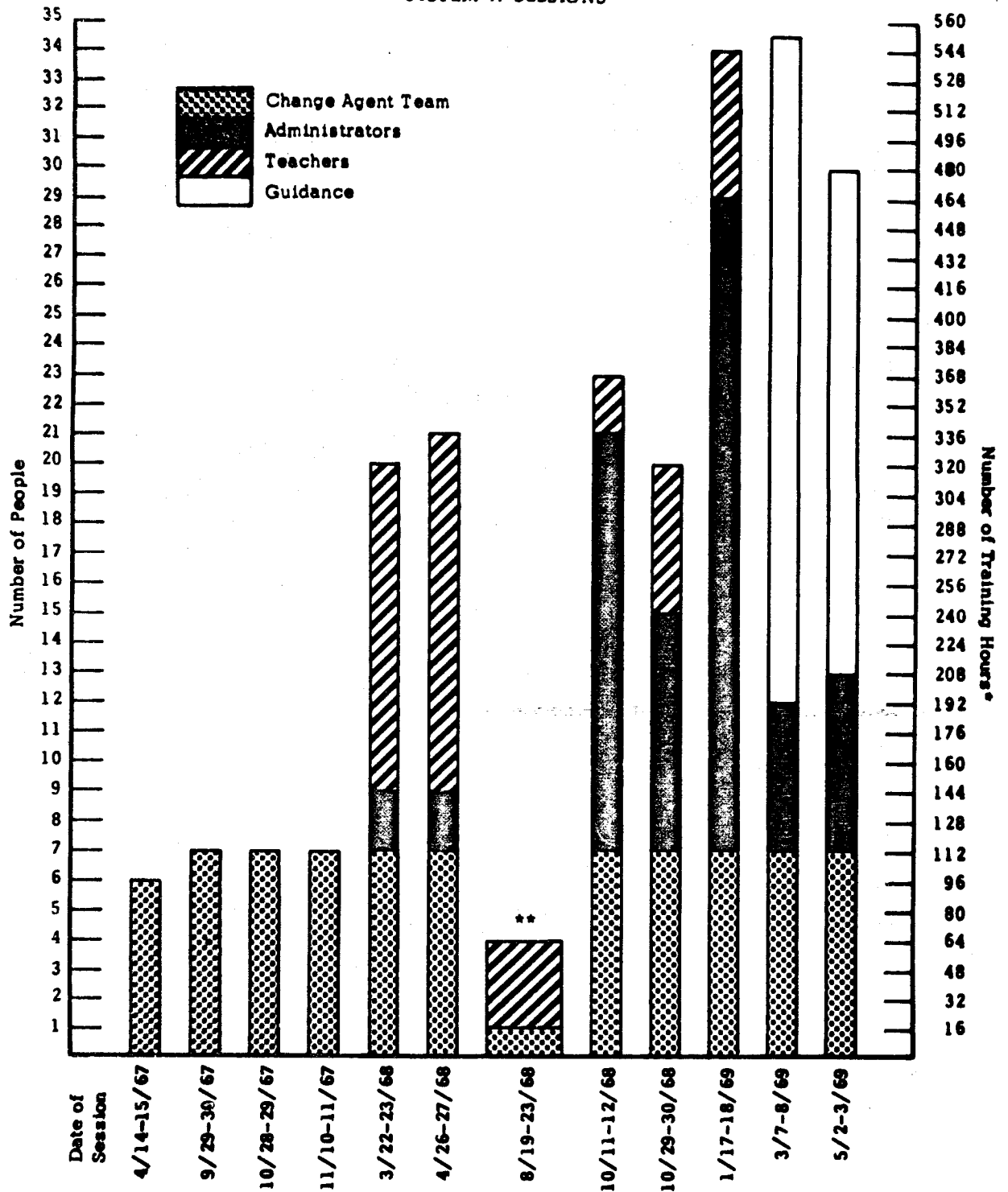
1967

- Change-Agent Team established
—six members
- March Data Collection—PEC Staff
- April Human Development Laboratory—CAT
- Sept. Change-Agent Team expanded—seven members
Human Development Laboratory—CAT
- Oct. Human Development Laboratory—CAT
Decision to focus on the introduction of Independent Study as a goal for CAT
- Nov. Human Development Laboratory—CAT
- Dec. Questionnaire sent to professional staff by CAT to determine feelings concerning Independent Study

1968

- Jan. Change-Agent Team expanded—eight members
- Feb. Planning session with teachers and PEC Staff to develop objectives for Human Development Laboratory to be held in March
- March Human Development Laboratory—Teachers and administrators from three elementary schools interested in Independent Study, CAT
- April Human Development Laboratory—Participants of March session
- May Visits to view models of Independent Study in other school systems teachers, administrators, CAT
Training session—CAT

SYSTEM A SESSIONS



*Training hours = 16 hours per person per session

**Five day session (48 hours)

Total Training Hours = 3536

Total Number of People Trained = 69

Figure 11
Man Training Hours

- Aug. Human Development Laboratory—Teachers and one CAT member
- Sept. CAT presentation to professional staff at pre-session
- Oct. Human Development Laboratory—Administrators, teachers, CAT
- Nov. Human Development Laboratory—Administrators, teachers, CAT

1969

- Jan. Human Development Laboratory—Administrators, teachers, CAT
- March Teachers from three pilot schools project plans for Independent Study projects, for 1969-70 school year
Second data collection—PEC Staff and CAT
Human Development Laboratory—Guidance counselors, teachers, administrators, CAT
- May Human Development Laboratory—Guidance counselors, teachers, administrators, CAT
- June Two-day session held by CAT to determine goals for 1969-70 school year (including planning for Human Development Laboratory training for an additional 70 teachers interested in Independent Study and developing a budget for the CAT)

System B

System B is also located in a manufacturing center. The community has a population of over 10,000 and is growing rapidly. This growth puts pressure for expansion on the school system and gives it the opportunity to be innovative as it constructs new schools to meet the increased demands. There are approximately 200 professional employees in the school district. In 1967 it was rated as the most innovative system of the eight in the sample; hundreds of teachers and school administrators visit it every year to observe its innovative procedures. Partly because of rapid changes in the community, this school system underwent several great changes during the time it was involved in the study. These included a change in the superintendency and subsequent resignation of two school board members, the passing of a twice-defeated school bond issue, and the planning of a new high school.

The Change-Agent Team in System B consisted initially of thirteen members, including the Director of Instruction, nine members of the High School faculty, three members of the Junior High School faculty and an Elementary School principal. After approximately eight months of work, the new Superintendent felt that a Change-Agent Team should be elected and asked that the initial group be disbanded and that new members be voted for. The election was held and all members of the original Change-Agent Team were re-elected by their colleagues with the exception of one faculty member. This was the first re-organization of the team. The second change in the group's structure came several months later when the Superintendent again decided to re-organize the team. There were fourteen members of this new group, one from each of the departments in the high school and the Director of Instruction. The new Change-Agent Team included only three of the original team members.

The Change-Agent Team in System B went through two periods of training and identifying needs in the school system. The initial team had focused on modular scheduling and independent study as the innovations which they felt should be introduced into their schools. After the team's re-organization the bond issue in the system passed. This gave the new Change-Agent Team a goal: that of helping to train other teachers to accept and practice innovations in the high school which was to be built.

In order to do this the Change-Agent Team decided to have a Human Relations Laboratory which would include all 100 members of the high school faculty. The team and the PEC Staff spent a day and a half in preparation for the Laboratory. Goals for their planning meeting included: (1) To prepare a diagnosis of the faculty meeting, (2) to consider operational plans for that day, (3) to develop training exercises and instruments to be used in faculty and departmental meetings.

The Change-Agent Team identified goals and problems, and listed and assigned priorities to these goals and problems. The group also developed a force field analysis of the task of involving the entire staff of the high school in a Human Development Laboratory. The team decided to function as co-trainers with the PEC Staff and assisted in the planning and preparing of the training design.

The format of the training design is included

Decision-Making Session

Participants were 100 members of the high school faculty. The Change-Agent Team

assisted the PEC Staff and acted as co-trainers.

Goals

1. To further develop communication and decision-making skills.
2. To compile recommendations for means of involving the faculty in the study of innovations.
3. To acquaint faculty members with the type of participation techniques the Change-Agent Team has been developing.

Training Design

Morning	Afternoon
Group Expectations	3. Two Way—One Way Communication Exercise
1. Open-Ended Sentences	Discussion of listening exercise
Triad, Cluster, and Large Group Discussions	Innovations
2. Locus of Decision-Making Exercise	Ways to involve faculty in the study of innovations
Cluster discussions of improvement of decision-making processes	4. Participation-Observation-Participation Exercise

Activities

OPEN-ENDED SENTENCES. Each participant completed the following sentences:

I think the biggest communication problem in this school system is _____.

I think that this communication problem exists because _____.

I think we can solve this problem by _____.

After individuals had completed the sentences, the large group was divided into triads for discussion of individual responses and subsequently met in clusters (groups of nine or ten

people) to further analyze the completed sentences.

LOCUS OF DECISION-MAKING EXERCISE. Each participant was asked to complete an instrument which listed approximately 20 items which are of concern in school systems and to decide: (1) Where decisions concerning these items were then made; (2) where these decisions should be made. Possible decision-makers included school board, central office administration, principals, teachers, and students. The instrument was constructed in the following manner:

Decision Items	Present Locus of Decision-Making	Desired Locus of Decision-Making
1	B O P T S	B O P T S
2	B O P T S	B O P T S

Several of the Decision Items are included here:

1. The decision on how the school calendar (number of days taught and when) will be determined, assuming that state legal requirements are met.
2. The decision on which instructional aids will be available for teachers' use.
3. The decision on the selection of textbooks.
4. The decision concerning parent-teacher conferences.
5. The decision on the hiring of teachers.
6. The decision on pupil discipline outside of the classroom.
7. The decision concerning the use of pupil achievement tests and scores on the building level.

When participating in the Locus of Decision-Making Exercise, teachers and principals felt that the central office and the Board of Education made the most decisions, but deemed it desirable that they be more involved in the making of decisions.

A summary of answers given to the Decision-Making Instrument is included here.

Participants believe the following to be the actual place of decision-making (where decisions are made now):

Students — 5
 Teachers — 112
 Principals — 477
 Central Office — 503
 School Board — 154

Desirable places of decision-making (where decisions should be made) according to participants include:

Students — 13
 Teachers — 676
 Principals — 459
 Central Office — 119
 School Board — 53

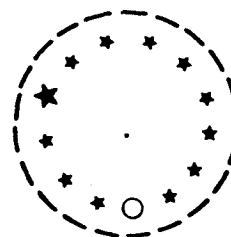
A discussion of the decision-making process and the perceived and desired loci of decision making was had in clusters and then with members of the entire group after the completion of the exercise.

TWO WAY—ONE WAY COMMUNICATION EXERCISE. Participants were divided into three groups. Each group was asked to follow directions and draw a diagram consisting of rectangles placed in various positions. The first group was given printed directions, the second was given directions orally by someone who could not respond to questions, and the third was given oral directions by a person who could answer any questions which were asked of him by those completing the diagram. A discussion of the exercise and the merits of two-way communications followed.

PARTICIPATION-OBSERVATION-PARTICIPATION EXERCISE. Members of the Change-Agent Team and the Superintendent of Schools met in an inner circle with one empty chair to discuss recommendations concerning decision-making which were formulated by clusters. The remainder of the faculty was seated in a larger outer circle. They observed the group's process and could participate in the discussion if they desired by going to the inner circle and being seated in the additional chair (see Figure 12).

Several recommendations for Decision-Making compiled during this session are included below:

1. We believe that factors affecting teachers should be a cooperative decision.
2. We are agreed that a definite problem exists regarding communication between staff and administration, and that change must take place concerning com-



★ CAT Member

★ Superintendent

○ Empty Chair

--- Faculty Members who could participate by going to the empty chair

Figure 12

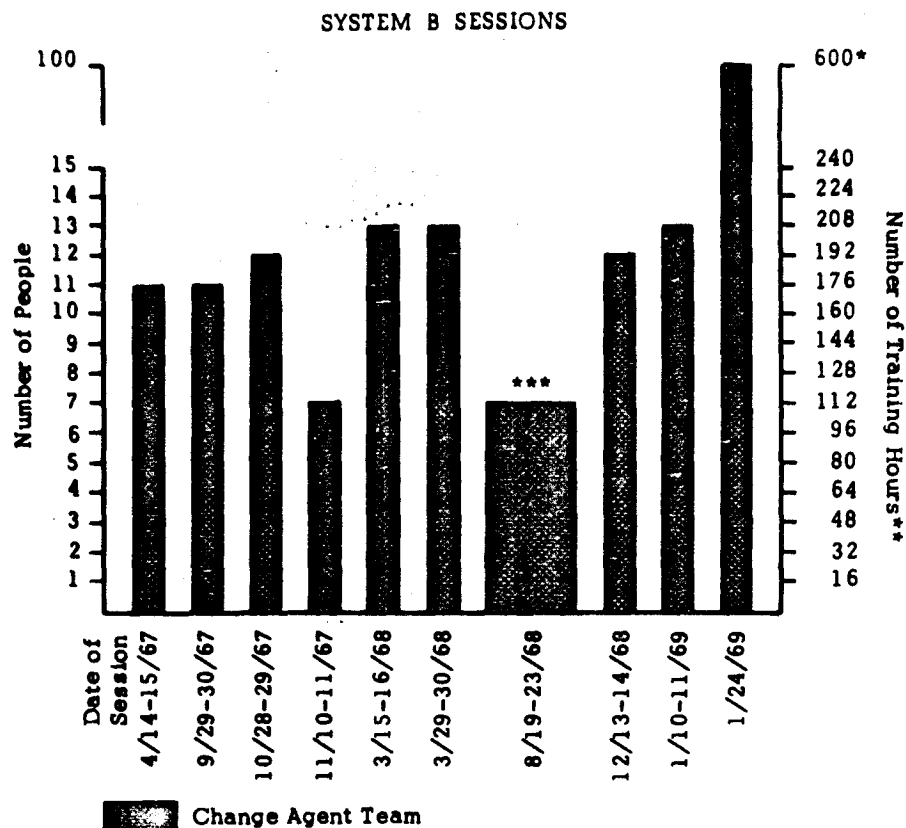
Final Session of a Day of Problem-Solving

communication among parties. In any instance of contention with faculty decision, the school board or other members of this community may call a public meeting to discuss the action of the faculty and overrule it.

3. We feel that a well-defined communications system that allows for a free flow of ideas among all parties should be structured so that decisions are reached with mutual trust and confidence.

One member of the Change-Agent Team evaluated the high school Human Development Laboratory in this manner: "People told me this was the best in-service we've ever had. They expressed very positive personal feelings. My own were a little less positive." Another stated: "People see us trying to make progress and feel better about CAT." A third stated: "Frustration was high after the meeting. People felt they were cut off too soon. Some self-condemnation: people felt they had been hypocritical." While still another evaluated the session in this manner: "What are the next steps? The staff is ready for more involvement."

In general members of the System B Change-Agent Team were committed to the project. During the two years approximately 125 professional members of the school system received 2,408 hours of laboratory training (see Figure 13).



*IN ADDITION: 100 members of the high school staff attended a one day session—an additional 600 training hours.

**Training hours = 16 hours per person per session

***Five day session (48 hours)

Total Training Hours = 2408

Total Number of People Trained = 25

(Approximately 10% of the professional staff)

Figure 13
Man Hours of Training

The initial team had been trained and was ready to begin incorporating the innovation which they had chosen. Because the group was recognized, training of the new team, identification of needs and problems, and the selection of an innovation to introduce into the school system had to be done a second time. Human Development Laboratory training, commitment of members of the Change-Agent Team to the project, and the support of the PEC Staff seemed to be factors which contributed to the success of the group. Lack of Change-Agent Team stability, uncertainty about the future of the team, reorganization of the group, the team's need for retraining, and the lack of obvious support from the Super-

intendent of Schools were major obstacles encountered by this team in the attainment of its goals. The Change-Agent Team in System B decided to continue to meet during the following school year.

System B

1967

- Change-Agent Team established
- March Data Collection—PEC Staff
- April Human Development Laboratory—CAT
- Second defeat of School Bond Issue—High School

Resignation of Superintendent and
several School Board members

New Superintendent

- Sept. Human Relations Laboratory—CAT
- Oct. Superintendent disbands CAT and
asks for election of new CAT—all
re-elected but one member
- Human Development Laboratory—CAT
Decision to focus on modular
scheduling and independent
study as a goal for CAT
- Nov. Human Development Laboratory—CAT
- Dec. Superintendent disbands CAT by chang-
ing the structure (one teacher from each
department in the high school—14 mem-
bers. Only three of the original team
remain.)

1968

- Jan. New team begins work—identifying
problems, etc.
- March Bond issue passes
- Human Development Laboratory—CAT
CAT decides to help train to
introduce innovations in new
high school building
- Human Development Laboratory—CAT
- Human Development Laboratory—CAT
- May Training Session—CAT
- Aug. Human Development Laboratory—five
CAT members and Superintendent
- Sept. Meeting—CAT and PEC Staff
- PEC Staff member addresses the Board
of Education and describes planned
change project
- Dec. Human Development Laboratory—CAT

1969

- Jan. Training Session—CAT
- CAT and PEC Staff plan laboratory
training for secondary school staff
- Human Development Laboratory—Entire
secondary school staff (100 members)
—PEC Staff and CAT, trainers
- March Second Data Collection—PEC Staff
and CAT
- June CAT plans to continue
- Superintendent resigns
- New Superintendent

System C

System C was the smallest in the study. It serves two villages and consists of two elementary schools, one in each village and a high school. Approximately 80 professional workers are employed by the district. System C is a new school district and is also highly innovative; it ranked third in innovativeness among the eight systems studied in 1967. It is somewhat restricted, however, by being located in a rather conservative area; a survey of parents in 1969 showed that 46% felt that "too many" new ideas were being tried in their schools. Another problem in this district is a high turnover of staff, due in part to the hiring of young teachers who are spouses of students at the University of Wisconsin.

The initial Change-Agent Team in System C was made up of five administrators. During Summer 1967 the district acquired a new Superintendent. He became a member of the Change-Agent Team and the group was later expanded to include four teachers bringing the total membership to nine. A unique situation occurred in this system. A member of the PEC Staff was a resident of the district, a member of the school board, and had been instrumental in unifying the district and planning for the new high school. This may have influenced the involvement in and continuation of the Planned Change Project in this school system.

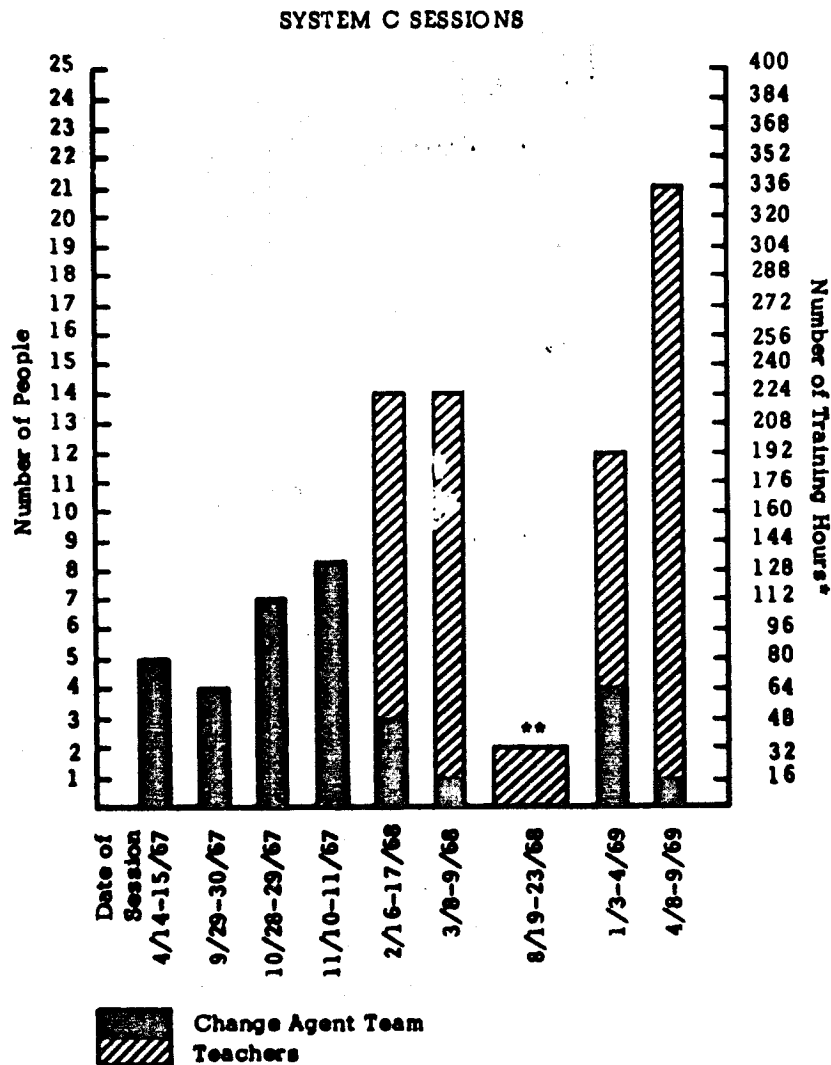
Because many of the original members of the Change-Agent Team left the district after the first year of the project, the group was reorganized during 1968. The structure of the team was changed at this time. Three committees, one in each school, plus a coordinating committee of three principals were formed. The Superintendent was no longer a member of the Change-Agent Team after its restructuring.

The goal of the initial members of the Change-Agent Team was to write a Philosophy of Education for the school district. This was a very appropriate project. Because of the high turnover in the district, a written philosophy was valuable for new teachers and gave the new Superintendent a chance to shape and influence policy in his school system.

This philosophy, however, may have caused problems in the district. It was written by members of the Change-Agent Team who, at this time, were the younger, more innovative, teachers that would, for the most part, remain in the system only a year or two. Since older teachers who lived in the district and had taught in the schools for many years were not involved, feelings of resentment and a division between the two groups seemed to develop at this time.

After this project was completed, the Change-Agent Team focused on the implementation of non-graded elementary schools. With the reorganization of the team, improvement of the format of high school classes and the introduction of unitized elementary schools became major goals of the group.

During the two years of the Planned Change Project, approximately 65% of the professional staff in School System C spent a total of 1,440 hours in Human Development Laboratory training sessions (see Figure 14).



*Training hours = 16 hours per person per session

**Five day session (48 hours)

Total Training Hours = 1440
 Total Number of People Trained = 53
 (Approximately 65% of professional staff)

Figure 14
 Man Hours of Training

The initial group, from within the school system, chosen by the Change-Agent Team to participate in the Laboratory training was composed of the English team from the high school and their principal (seven members) and the upper primary teachers from Elementary School A (six members). The elementary school was to be initiating team teaching and ungraded classes in the Fall and members attending the session from this school would be working as a team at that time. It was hoped that this session might bring the groups into dialogue and that the elementary school faculty would be helped to successfully implement their innovative procedures.

Originally the training design called for T-Groups combining members of both faculties. The format was changed, however, when it became apparent that the English team had personal and philosophical differences which needed to be explored. Because of this, the English team worked alone while the elementary faculty met separately to discuss problems and procedures in preparing for the coming innovations.

The English team had varying reactions to the training. Two members left the session before the end and did not return. Others felt that the session had been very helpful. Some members were simply confused by what had taken place. All seemed to agree that problems that had been buried before were out in the open. By the end of the semester, however, the English team disbanded. This was blamed, by some, on the Laboratory training.

What actually happened with this group is a matter for conjecture. They had problems when they arrived. Whether these problems could have been solved by more training or whether the training aggravated them is impossible to determine. This Human Development Laboratory training session, however, had a deleterious effect on the succeeding labs since it frightened potential participants and caused the Superintendent to become unsure of training sessions and their effect. Anxiety feelings at the beginning of further sessions in System C were always higher than in any other system after this Laboratory.

In comparison, the elementary school faculty members attending this session had a very successful experience and asked to come back in a week or two and bring their principal, a member of the Change-Agent Team, so that they could make more progress in preparing for changes. As a result, a second training session was held for members of this group.

After the reorganization of the Change-Agent Team, a combined training session was planned and executed for members of the Teachers' In-

service Committee (a functioning committee in the school system) and the Change-Agent Team. This session considered further training sessions for the rest of the faculty and particularly with the two committees and the School Board to better define the committees' functions and the Board's policy.

The final laboratory training session held in School System C focused on problem solving techniques and the use of consultants for training in a specific area. Participants included the faculty at Elementary School B who requested the training before initiating plans to become a unitized school. The format used for this session is included.

Laboratory Training Session

Participants were faculty members of an elementary school.

Goals

1. Examination of the unitized plan and development of faculty commitment to the plan.
2. Examination of faculty competencies in the team work required to implement the Unitized School.
3. Development of communication skills of faculty and principal.

Training Design

Morning	Afternoon	Evening
1. Non-Verbal Sequence	D-Groups	6. Preparation for Consultants
2. Group Expectations	5. Force Field Analysis	
Discussion of training objectives		
3. Open-Ended Sentences		
4. D-Groups		

Morning

Consultants—Unitized School

Activities

NON-VERBAL SEQUENCE. Participants expressed feelings without verbalization and later discussed these feelings with others. This sequence included: walking without greeting others, greeting others non-verbally, and working with an invisible magic ball. Members of the group then selected a partner and non-verbally cooperated in drawing a picture showing how participants felt about being at the session.

GROUP EXPECTATIONS. Feelings about the session were discussed by participants and pictures drawn non-verbally with a partner were referred to and analyzed by participants.

OPEN-ENDED SENTENCES. Each participant completed the following sentences:

My greatest difficulty in working as a member of a unitized school will be _____.

As a member of the faculty I feel the support of my colleagues when _____.

A strength of the unitized school plan will be _____.

The group split into three sub-groups and discussed the sentences and their answers.

D-GROUPS. These sub-groups were unstructured and members were free to discuss any subject including interpersonal problems and give feedback to others concerning reactions and feelings.

FORCE FIELD ANALYSIS. This procedure requires the identification of positive and negative forces which tend to push toward or against a particular goal (in this situation, the unitized school), diagnosing the problem situation, considering action alternatives, trying out the action plan, and finally diffusing and adapting the plan. The force field analysis developed at this session is included here.

Unitized School

Negative Forces	Positive Forces
1. Classes too large	1. Desire to reach child as an individual
2. Children overdirected	

Unitized School (cont)

Negative Forces	Positive Forces
3. Lack of time for materials	2. Desire for greater achievement
4. Lack of community understanding	3. Desire to define and differentiate roles
5. Cognitive achievement may not signify improvement	4. Desire for more student creativity
6. Discipline problems	5. Desire for students to assume more responsibility
7. Teacher hesitation	6. Desire to reach the whole child
	7. Desire for teacher satisfaction

PREPARATION FOR CONSULTANTS. In order to make effective use of consultants in the area of the unitized schools, questions were formulated to guide them in their discussion. They are included here.

1. When developing a unitized school, how should leaders be chosen?
2. How can leaders get the team to work together?
3. What things should the administrator give attention to in order to make the plan work?
4. What were the most critical problems which you faced?
5. What changes are you planning for September?
6. What criteria have you used to evaluate the program and who has done the evaluating?

Participants at this session were very satisfied with progress in content work: examining plans for the unitized school, working with the consultants, developing the force field analysis. Some felt that, in addition to this, communications within the group itself had also improved.

A questionnaire was sent to members of the professional staff in System C. Members were

asked to evaluate the Change-Agent Team in the school district. Several responses to the question, "How is the Change-Agent Team different from other school committees?" are recorded here.

"The Change-Agent Team deals with people working on various levels in the system. It is more of a planning and thinking committee."

"It works in a larger area dealing with the whole school. Other committees deal with a specific area."

"The Change-Agent Team seeks to improve the whole school system."

Size of the school system and the innovativeness of its faculty members were probably the greatest assets to this Change-Agent Team. System C had only 80 professional employees. The Change-Agent Team could, therefore, make and see progress in a relatively short period of time. Due to normal teacher turnover, however, the composition and structure of the team was changed almost entirely during the second year of the project. This, and a seeming lack of commitment to the concept of the Change-Agent Team and the Human Development Laboratory training by some of the professional staff members were probably the major obstacles to the success of the team.

System C

1967

Change-Agent Team established—
8 members

- March Data Collection—PEC Staff
- April Human Development Laboratory—CAT
New Superintendent
- Sept. Human Development Laboratory—CAT
Team expanded (9 members)
- Oct. Human Development Laboratory—CAT
Decision to focus on Development

of Philosophy of Education for the school system

- Nov. Human Development Laboratory—CAT
- Dec. Philosophy of Education completed

1968

- Jan. CAT focuses on implementation of Non-Graded Elementary Schools
- Feb. Human Development Laboratory—English team, Elementary School A faculty, three CAT members
- March Human Development Laboratory—Elementary School A faculty
- May Training Session—CAT
- June English team disbanded
Most of CAT members leave school system
- Aug. Human Development Laboratory—two teachers
- Sept. CAT and PEC Staff meet and decide to continue and reorganize
(Reorganization included the formation of three change agent groups—one at each school and a central CAT to coordinate the groups. The central committee was made up of the three principals. The Superintendent was no longer a member of a CAT.)

CAT decides to work on improving format of high school classes and utilized elementary school

CAT collects data on student-teacher, teacher-student feelings

1969

- Jan. Human Development Laboratory—five CAT members and In-service Committee
- April Human Development Laboratory—Elementary School B
Focus: Utilized School
- March Second Data Collection—PEC Staff
- June CAT plans to reorganize and continue in September

IV Achievements and Evaluation

The PEC Staff obtained a variety of information to evaluate the effects of interventions in the three experimental systems (Hilfiker, 1969). These included observations of support for Change-Agent Teams and laboratory training, casual observations of personal growth and growth in the effectiveness of Change-Agent Teams after laboratory training, evaluations of the program from anonymous questionnaires, and systematic data on changes in attitudes and behavior from questionnaires administered at the beginning and conclusion of the study.

Effects of Laboratory Training

The leadership of each of the experimental school systems evaluated the effects of laboratory training positively. After observing some of its effects, they committed substantial resources to further training. Although the Research and Development Center covered the costs of training, the school systems were responsible for the costs of meeting rooms, meals, overnight lodging for participants in the sessions, and the salaries for substitutes to replace teachers who were in training sessions. Given the many hours spent in these sessions (see Figures 11, 13, and 14, Chap. III), these represent sizeable investments, and it is unlikely that the schools would have invested so heavily had the training not been perceived as useful.

The Change-Agent Teams that experienced laboratory training survived and continue to exist. In contrast, the teams established in two of the five control school systems, receiving no laboratory training or external support, withered and died before they became well organized.

From observing the teams in training sessions and listening to tape recordings of their regular meetings the PEC Staff became convinced that the human relations training was

being utilized outside of the training sessions and was increasing the effectiveness of the teams. For example, one tape revealed a confrontation between two members discussing the absence of one of them from the previous meeting. The other was angry and felt that this absence denoted a lack of commitment. Business was set aside until this confrontation was satisfactorily resolved and the group was ready to work again. In another meeting a group member remarked, "I have often sat at this table and felt frustrated and afraid to say anything." There was a moment of silence and then a shocked, "In this group!" from another member. The first immediately exclaimed, "Oh, no! I meant with other committees that meet in this room." This was followed by a relieved, "I couldn't imagine that you wouldn't feel free in this group." It seems apparent that openness and freedom of communication became values for this Change-Agent Team.

The same types of observation reveal the personal growth of teachers and administrators who have experienced human relations training. A specialist who worked with personnel in several schools had asked to participate in the human relations training because, she said, "During the year I noticed that suddenly a teacher would become more easy to work with, listen more, and be willing to try out my suggestions. Then one day I discovered all the teachers who had changed had been going to the training sessions." A teacher reported that training had improved her teaching. One of her children had even told her that the class enjoyed school more, "because now you treat us more like people." Another team member found a particular human relations exercise carried out at one of the laboratories very helpful to him in understanding the reactions of others. Two years later when another laboratory session was being planned in the same system one of his team mates suggested that the exercise be used again. Turning to the

also did in 1967; the two systems showing the greatest improvement (numbers E and H) were in the control group.

The data in Figure 16 show changes in average responses to an 8-item index of morale between 1967 and 1969.⁴ The index was based on questions such as "I find my job very exciting and rewarding," "I feel involved in a lot of activities that go on in this school," and "I really don't feel satisfied with a lot of things that go on in this school." Changes in the response categories, from "always" to "almost never" in 1967 to "completely agree" to "completely disagree" in 1969, probably account for the lower average scores in 1969 than 1967, but this bias should be constant across the eight systems. The graph shows that two of the three experimental school systems had less

improvement in morale than two of the five control systems.

Data on teacher innovativeness, the adequacy of staff meetings, and the executive professional leadership of principals also fail to show that the experimental school systems improved significantly more than the control school systems.

The failure of these data to demonstrate the effectiveness of our interventions in changing basic norms and behaviors in school systems may stem in part from the limited intensity and duration of the interventions; in order to make a basic change it may be necessary to train more members of the school staffs more intensively and for longer periods. In addition, other events and processes occurring in these systems, events and processes not at all under

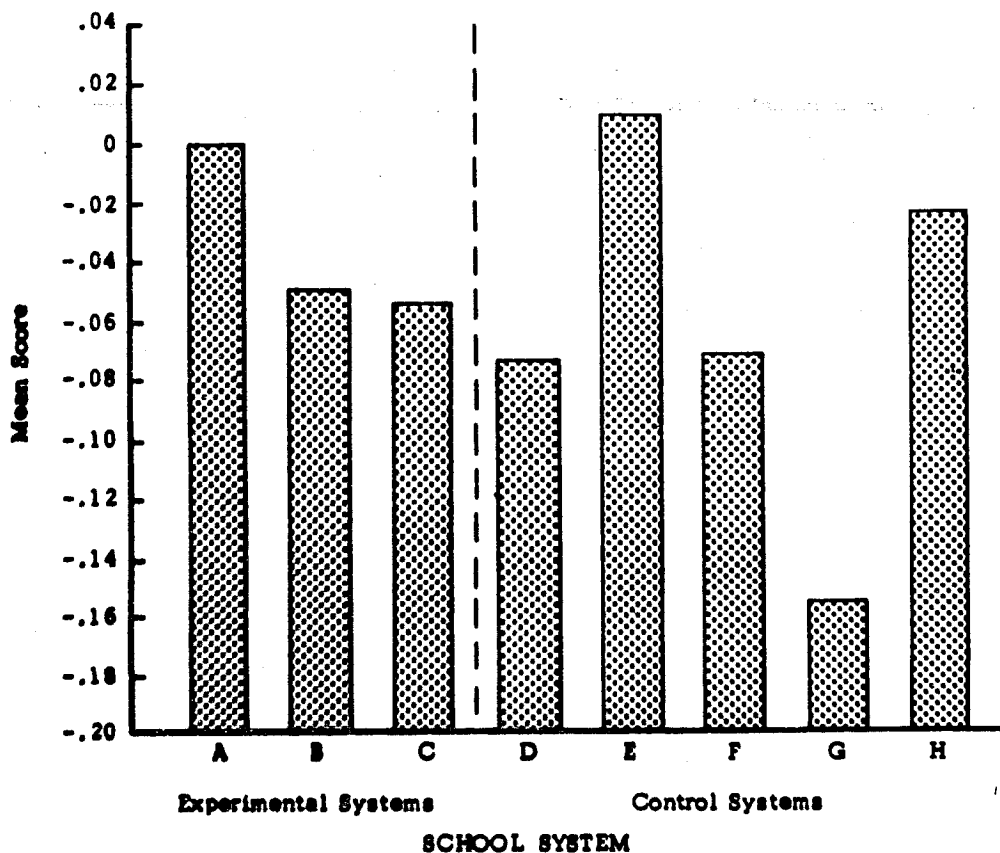


Figure 16
Relative Improvement in Mean Scores on Morale Index,
Eight Wisconsin School Systems, Between 1967 and 1969

data are available is indeed somewhat unrepresentative, it is not believed that this error or other measurement errors can account for the low correlations, for the correlations would have to be much larger than they are to attain significance. It seems more likely that the limited amount of training most persons received was not enough to produce lasting changes in the dependent variables which were measured. This is especially true for teacher innovativeness and relations between teachers and principals, which were not expected to be directly affected by the training. It remains possible and likely that some teachers and administrators who received more intensive laboratory training were strongly affected by it, but the questionnaire data cannot demonstrate these effects.

The data for changes in school systems are superior in quality to the data for changes in individuals: the samples are larger, since it was not necessary to rely only on data for persons who answered questionnaires in both 1967 and 1969, and averages tend to be much more reliable than measures for individuals. Yet the average measures fail to show that the three school systems with which the PEC Staff worked intensively improved more than the five control systems. Some of the data are shown in Figures 15 and 16. Figure 15 shows average responses of teachers and administrators in the eight school systems studied to an 11-item index measuring support for norms of openness, trust, and innovation.³ While the three experimental systems showed the highest average support for these norms in 1969, they

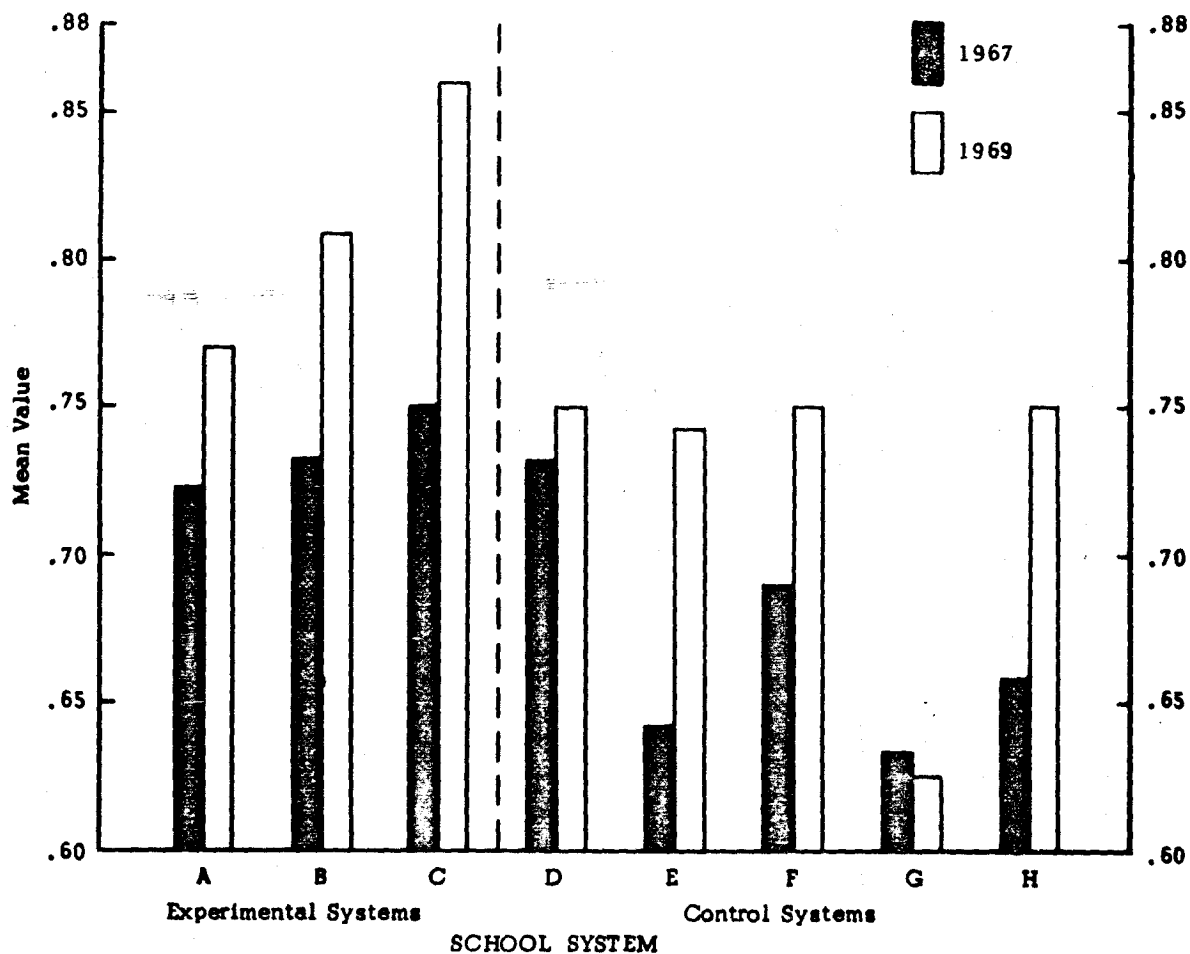


Figure 15
Mean Values of Support for Norms of Openness, Trust, and Innovation; Eight Wisconsin School Systems, 1967 and 1969

our control, were having large effects on teacher morale, teacher norms, and teacher innovativeness. These events and processes include administrative succession and staff turnover.

Administrative Succession

During the course of the project, two of the three experimental school systems experienced major changes in administrative personnel, while this was true of only two of the five control systems (and then the changes were less important). These experiences of administrative succession had great effects on personnel in the systems affected.

System A had the same Superintendent, Director of Instruction, and high school principals throughout the course of the study. The PEC Staff felt it was most effective in this system. Part of the reason for this success was the continuing stable support for the project from the school administration.

In System B the Superintendent resigned after the first collection of data in 1967 and after the Change-Agent Team had been established. His resignation was partly caused by the defeat of a bond issue in two successive elections and by disagreements with important school board members. He had been known as a permissive leader in an innovative school system. His successor, brought in from outside, was helped by the resignation of two school board members and by the passage of the bond issue for a new high school; he may have been partly responsible for the latter success. After two years, about the time of the second data collection, he announced his resignation. In the 2-year period the Director of Instruction and the high school principal resigned and were replaced; the new principal lasted only one year and was succeeded again. The succeeding superintendent was far more directive and dynamic than his predecessor and his contribution to the system in terms of educational design for the new high school will be felt for years to come in the system.

Administrative turnover was just as great in System C. Again the new superintendent took over from his predecessor after the first wave of data collection and after the commitment to the project had been made. His predecessor was the second of two superintendents of this highly innovative system. The two years of the study saw the replacement of the superintendent's major administrative assistant (a role corresponding to the Director of Instruction), the high school principal, and both elementary school principals. One of the

new elementary principals was in the system for a year and was replaced. In addition, the central office had a special consultant for part of the period of the study, a dynamic woman who was associated with another innovative project in the system.

In contrast, only one of the five control systems experienced the succession of superintendents, although the superintendent of another system became ill, with disorganizing effects on the system. There were generally fewer changes in the principals of schools in the control systems.

The effects of these changes on the influence structures of these systems is shown in Figures 17 and 18. In both 1967 and 1969 teachers and administrators were asked, "In general how much influence do you think the following groups of persons now have in determining educational matters (e.g., curriculum, policy, etc.) in your school?" Response categories ranged from 0 for "none" to 4 for "a great deal"; respondents were asked to rate the local school board, the superintendent, the principal of their school, teachers in general, and a variety of others. Figures 17 and 18 have been prepared by summing the mean ratings for school board, superintendent, principal, and teachers in general, and then dividing each component by the sum. Thus the relative power of each role, using this index, could logically range from 0%, if the mean rating for the role was "none" to 100%, if the mean rating for the one role was greater than "none" and the mean rating for the other three roles was "none." Obviously all roles have at least some influence in each system, and the four role types do not exhaust sources of influence, so this index merely represents the relative influence of each of these four roles.

Figures 17 and 18 are triangular diagrams. Each apex of the triangle represents a maximum degree of influence, and the opposite side represents a minimum degree of influence, for the indicated role. Each school system is represented by an arrow in the diagram. The tail of the arrow indicates the score for the system in 1967; the head the score for 1969. In Figure 17 teachers and principals [the relatively "lower participants"] are combined in one dimension, and in Figure 18 the superintendent and school board [the "higher participants"] are combined in one dimension, simply in order to show the relative movement of influence of each system in four dimensions of authority in just two figures.

Figure 17 shows that in System B the Superintendent's role gained greatly in perceived relative influence, mostly at the expense of

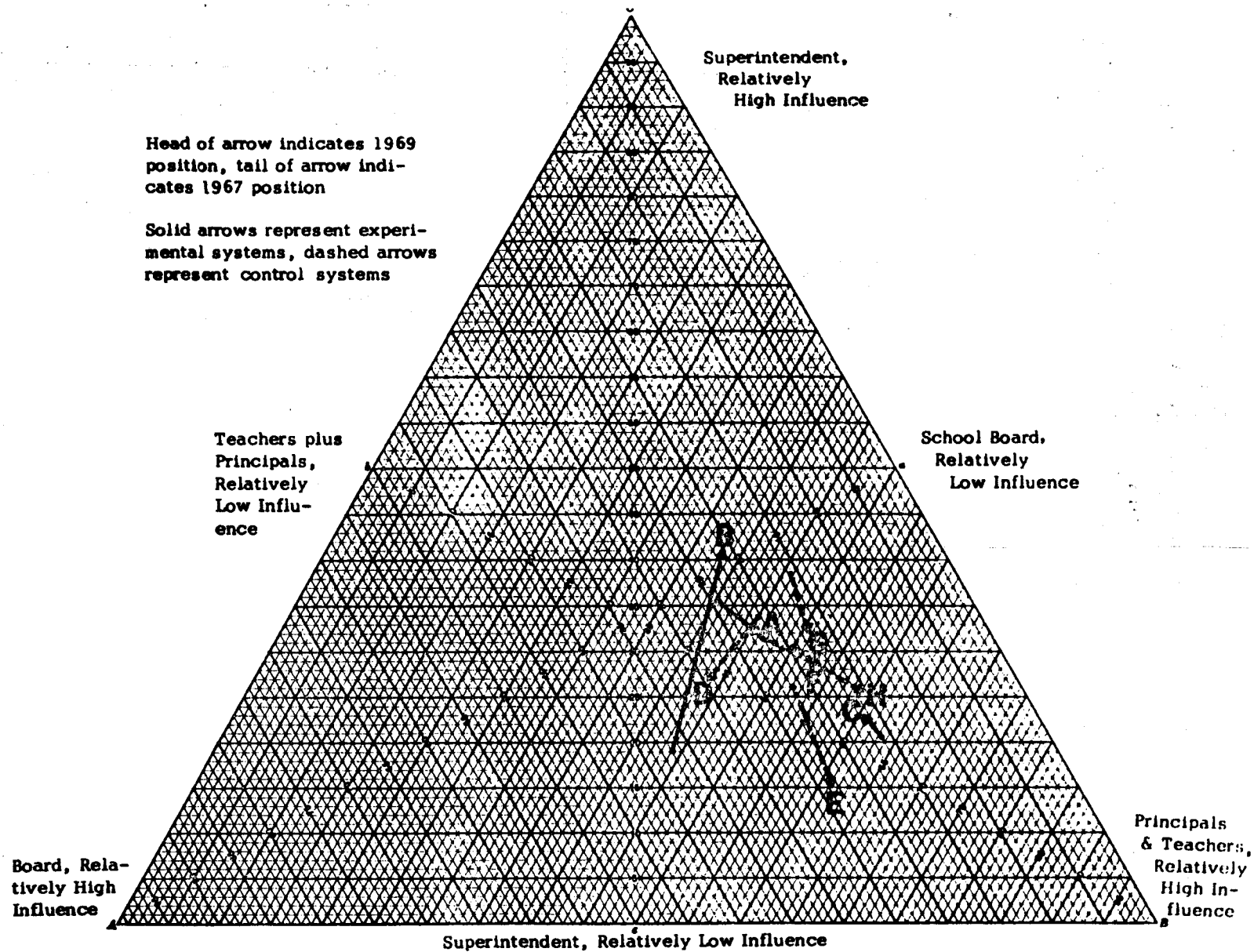


Figure 17

Relative Influence of Board, Superintendent, and Principals Plus Teachers, 1967 and 1969

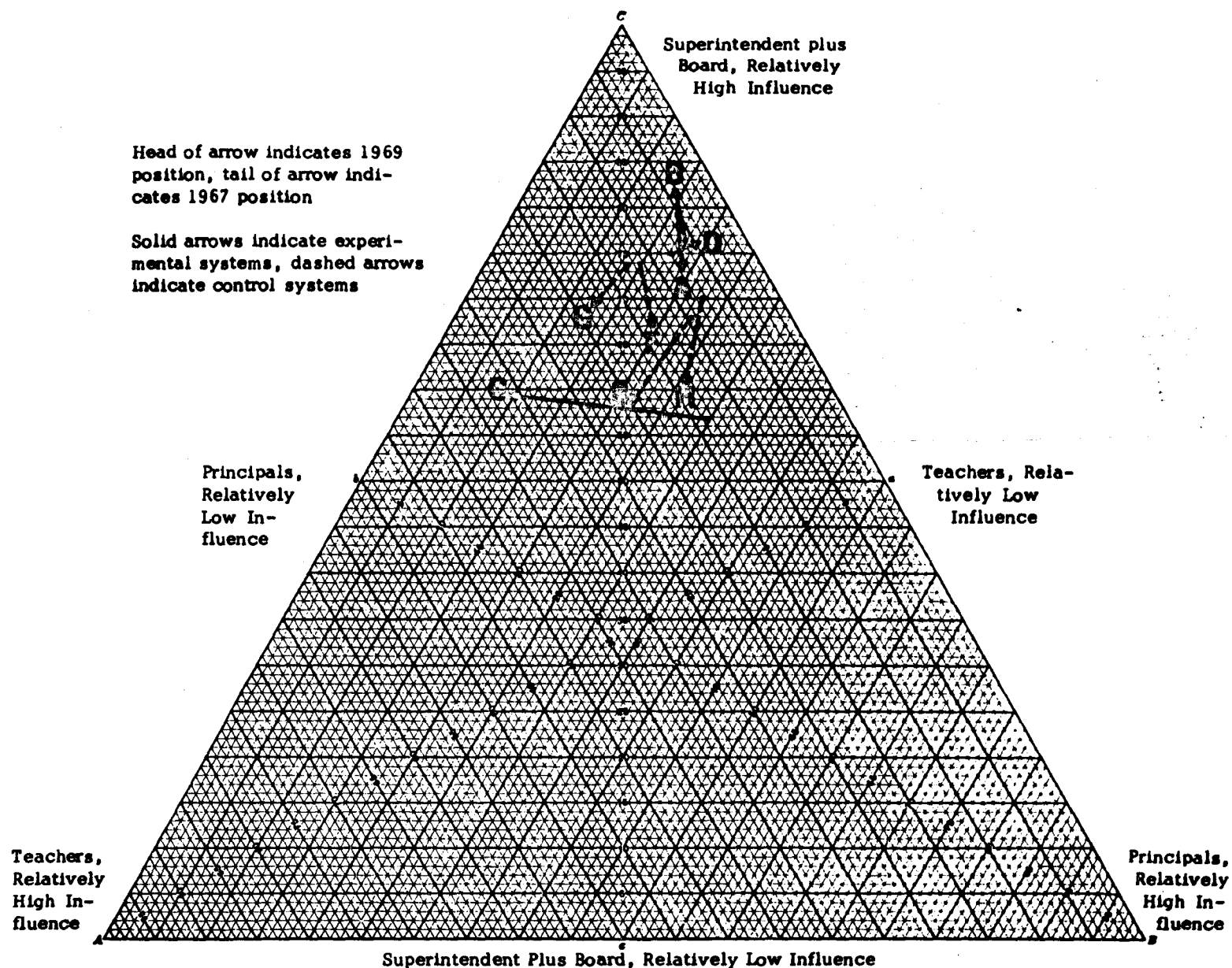


Figure 18

Relative Influence of Board Plus Superintendent, Principals, and Teachers, 1967 and 1969

the role of the school board. In System C, the other experimental system with a new superintendent, the role was perceived to lose influence very slightly. However, Figure 18 shows that in System C teachers were perceived to gain greatly in relative influence, entirely at the expense of principals. That administrative succession does not have uniform effects on authority patterns is also shown by the results for Systems H and D, the two control systems where the superintendent either resigned or became ill. In System H the superintendent role lost influence almost equally to principals and teachers, and in System D the superintendent was perceived to lose influence mostly to the school board. The effects on influence patterns of administrative succession depend upon the characteristics of the predecessor and his successor and also upon the state of the system at the time of succession.

Administrative succession probably has many effects upon other characteristics of school systems of interest, including the formalization of rules, norms about communication, and innovation. Since the PEC Staff did not design the data collection to study the effects of succession, it can only speculate about the effects, although these speculations can be grounded upon prior research and theory (e.g., Gouldner, 1952 and 1954). A succeeding official in any organization is almost certain to be insecure, especially if he is appointed to change some policies of his predecessor. His superiors, not having full confidence in him, will monitor his behavior closely. Lacking informal relations with others in the organization, he will lack many important sources of organizational information. His subordinates are also likely to be insecure, especially if his predecessor has been permissive and democratic. They will tend to attempt to extend their sphere of autonomy in the organization and will withhold information from him if they feel he may act against their interests. In such a situation, the successor is likely to move in two somewhat inconsistent directions: he will try to formalize rules and communication patterns, and he will engage in what Gouldner calls "pseudo-gemeinschaft" behavior with his subordinates, a kind of superficially friendly behavior designed to elicit trust and informal support that is usually treated with skepticism by others. In other words, the administrative successor will often tend to increase some of those aspects of the organization our interventions were designed to diminish: centralization, formalization of authority and communications, and reciprocal distrust. It is likely

that these types of behavior will be transitory; as the successor develops confidence and an informal network of work associates, distrust will diminish and the felt importance of centralization and formalization will decline. In school systems this is likely to take at least two years, however.

We hoped that the change-agent teams would be able to assist in the transition process, but they did not, probably because they lacked institutionalization at the time of transition. The succeeding superintendents evidently distrusted these creations of their predecessors and the group at the University of Wisconsin. One joined the change-agent team as its leader, and initially its only other members were principals and other administrators. Only after about a year was he confident enough to include teachers in the team, and during this period the team was relatively ineffective in terms of its stated goals. The other superintendent drastically reorganized the change agent team that was already in existence, although he did not join it himself; both its leader, the director of instruction, and most of its members, were newly appointed or elected. Even so this change-agent team was suspicious of the superintendent. For some time they devoted much of their regular meetings to discussing the extent to which the superintendent would permit them to influence school system policies; skeptical that any effort on their part would have any real effects, they devoted little time to important school system policies, yet they failed to discuss these concerns with the superintendent in an open fashion for more than a year.

A well established change-agent team could perhaps aid in the transition when a new school superintendent assumes office. They might serve as an ideal channel for communicating to him the informal culture of the system and the hopes and fears of its members, and they might serve as a sounding board for his ideas about possible changes in the system. These change-agent teams could not do this, for they were not well established, and the succession of superintendents made it difficult for them to become established.

Teacher Turnover

The turnover of administrators has important and dramatic consequences for several aspects of school systems. Turnover of teachers also has important consequences, although these are not usually as dramatic or visible. More time is required for newcomers to be integrated in primary groups than in the

formal organization; while formal rights and obligations may be quite explicit, informal procedures may be implicit and may be learned only through interaction with friends. Thus, as turnover rates increase, patterns of informal communication are less well developed. This means that high turnover makes it difficult for a school system to transmit its distinctive culture to newcomers and thereby maintain this culture. Furthermore, when high turnover rates exist over a period of time, members of school staffs come to expect it to continue at a high rate, and this means that individuals will lack commitment to the organization and will expect that others will also have little commitment. High turnover rates probably lead to lower levels of reciprocal trust, for there is ordinarily less reason to trust another who has no commitment to one's organization than another who is committed.

Sometimes high turnover makes it easier to change organizations. High turnover makes it difficult to institutionalize change, however, and it also reduces levels of trust and tends to emphasize power based upon formal position rather than upon competence. Thus, high turnover makes it more difficult to change school systems in the ways attempted by the PEC Staff.

One of the experimental systems, System C, had the highest staff turnover in the sample of eight school systems, and System B also had a relatively high rate of turnover. The following table indicates the magnitude of the difference:

Table 5
Staff Turnover and Norms of Schools

School System	Percentage of staff employed in the system less than two years	Percentage of staff hoping to be employed in the same school system in 1974
Experimental Systems:		
System C	34%	46%
System B	32%	52%
System A	25%	60%
Control Systems:		
System E	21%	46%
System G	21%	51%
System D	20%	64%
System H	13%	61%
System F	12%	59%
All Systems	21%	58%

When, as in System C, more than one out of three teachers or administrators have served the system less than two years (with more than one of six currently in their first year of service), and when fewer than half of them hope to be in the same school system five years hence, it becomes extremely difficult to institutionalize new norms regarding trust, cooperation, communication, and innovation. Even if satisfaction with teaching and with administrative leadership is high, as it was in System C, commitment and involvement may be relatively low.

Data Feedback

One important aspect of the original intervention design was the feedback of data from questionnaire surveys to change-agent teams and others in the school systems. The PEC Staff felt this information would be very useful in the participants' efforts to diagnose problems in their schools and in their plans to solve the problems. Thus, after the data from the 1967 survey were compiled, a small portion of the results were discussed at a series of meetings with change-agent teams and others, printed memoranda containing these were distributed, and correspondence concerning data was engaged in.

This data feedback was almost totally without effect on the activities of the change-agent teams or others in the schools. For example, a discussion of teacher morale and its correlates, pointing out the relatively low morale of some groups of teachers in some systems, received polite attention but elicited little discussion. A discussion of administrative succession and its correlates aroused more interest; teachers in systems affected by new superintendents recognized the validity of the material presented and discussed it a little, but only in the session at which the material was presented; it appeared to have little effect on their later work. At another session the great differences in the morale of teachers and students in the two high schools of one of the systems was pointed out. At the time this was noted as a probably correct diagnosis, but again it produced no further discussion or action. (Somewhat later there was a student strike at the high school with low morale; while this suggests that our procedures might have some diagnostic validity, this knowledge is of little gratification, since in fact the data were not used for problem diagnosis or problem-solving.)

Evidently data, however valid they might be, will not be used by change-agent teams or

school administrators unless they have a felt need for the data and the kind of theory of action that will make the data relevant. It is likely that, if data feedback is to be effective, the demands for the data must come initially from the participants, in this case the change-agent teams or school administrators. The problem of stimulating the demand for data has not yet been solved. It seems that presenting some kinds of data does not stimulate demands for other data felt to be of greater immediate relevance. Perhaps such demands will only arise if school personnel feel they have real influence over school policies and if they are in a situation where they must choose between real alternatives and can see the need for information about the alternatives.

Summary

In this section we have presented some evidence showing that our interventions in three school systems has some of the intended effects. The PEC Staff has been unable to provide evidence that these interventions produced greater changes in individuals and school systems exposed to them than in individuals and systems not so exposed. Changes in general norms governing interpersonal relations in school and changes in general orientations to innovation may require greater inputs than were available and longer periods of time than two years. Demonstration that such changes are effective may require statistical or quasi-experimental controls for such major confounding factors as administrative succession and teacher turnover.

How interventions could have been made more effective with the limited resources at the disposal of the PEC Staff is the next consideration.

V Restrospect and Alternative Futures

This report is a record of two years of cooperative effort between the PEC staff and three school systems. What could have been done differently to have made the effort more productive? We now address ourselves to alternatives to the initial project.

A More "Compelling" Approach Versus the Therapeutic Model

This model, as described above, supports training in interpersonal and problem-solving competencies, and emphasizes the responsibilities of the internal change-agent team to generate targets for change and to improve structures for facilitating change. There may have been too much confidence placed by the PEC staff in process training which assumes a discovery approach to learning rather than the use of the authority of the University expert to instruct personnel in problem-solving. The Staff could have made a more aggressive thrust by directing the attention of school personnel to areas of school life requiring diagnostic effort and systematic planning for change.

A possible shortcoming or distortion of the therapeutic approach regarding the seductiveness of sensitivity training not accompanied by an emphasis upon changing reality was recognized by a staff member and is described in the following memorandum to his colleagues:

There is possible weakness associated with training for the improvement of interpersonal relations. Such training offers only one component of a strategy to solving practical problems. To develop the point consideration may be given to what is involved in changing a school with the expectation that specific changes will represent improvements. In addition to sensitivity training, problem-solving activities and their improvement as per-

formed by school personnel are strategic. Human relations as embraced in sensitivity training is only one rubric of necessary activity. An accurate statement is that sensitivity training that emphasizes interpersonal relations is a necessary, but not a sufficient activity in an effective strategy for changing a school system. The equally necessary rubric of problem-solving involves several subactivities: describing and diagnosing reality, formulating problems, identifying needs, deliberate selecting of change targets (characteristics of the school reality that require change), planning and carrying out appropriate actions, evaluating outcomes so as to keep problem-solving in contact with reality, interpretation of data systematically collected about a school system, and similar activities must be mounted by school personnel if changes are to be made successfully. Included also are strategic activities of searching for and installing innovations that offer the prospect of changing the realities that must be changed if problems associated with the internal workings of the school are solved.

It was at this time that the PEC staff provided the change-agent teams with criteria for selecting changes as reported on page 19.

Each school system responded and specific targets were selected. These decisions regarding needed school system improvements as selected by change-agent teams had influence upon training designs. How could the PEC staff have been more forthright and helpful, follow through with more dispatch, and help the teams to become effective without the investment of more time and energy? Effective instruction involves motivation and self-direction of the learner that is facilitated by the instructor. The PEC staff's position is

that only the internal structure can make such decisions as represented by the criteria, but that the external structure may have to "strongly" suggest that such focusing upon decision-making is necessary.

Improvement of Change-Agent Team Structure

The status of change-agent teams in Systems B and C was in doubt at times. Both groups lacked continuity of membership. System B did not have vertical role representation. The group was composed primarily of high school representatives with an elementary principal as a liaison for a short period of time. This was only a gesture toward the concept of a system-wide team. In School C the central change-agent team enabled building teams to be formed. There was, however, a lack of coordination at the system level which was due, in part, to the fact that the central administrative staff members saw the school system as being small and not needing a systematically operated structure to introduce and implement change.

Additional community involvement in change-agent team activities would have been desirable. System C found that perceptions in their community indicated that the school system was possibly too innovative. Helping community leadership to see goals and assist in setting expectations for the school is an important aspect of change and improvement.

System A had a school board member on the change-agent team. This is one way to provide a link between schools and the community. Another way is to create problem-solving teams that include parents and pupils at the building level. This involvement of students and parents is calculated to open doors for more community, school, and professional dialogue-inquiry-action.

Improvement of Human Development Laboratory Sessions

A mood of indecisiveness was projected at times by the PEC staff whose members were as dependent upon the change-agent teams as the teams were upon them. This was due, in part, to the group's own risk-taking efforts. The staff needed the opportunity, which the project provided, to explore techniques and to develop training designs. For example: the locus of decision-making instrument was invented by the staff and non-verbal exercises were adapted to school teachers and adminis-

trators by the staff. If a similar project was done again, members of this group could act with more confidence, greater sensitivity and expertness at critical points in developing and executing training sessions. A body of funded experiences has been formed that would be useful to school people and human-relations trainer-consultants who are contemplating such a project. This report itself is designed to be helpful in the transfer process.

Would additional or longer training laboratories have produced more penetrating effects? One and one-half days is not much time for a session of this kind. Systems intending to use this type of training might find ways to create a greater training density than short sessions produce. The kind of schedule reported here did work well in the three systems. It is calculated that such is possible and compatible with the norms of many systems. When limited experience with training is seen as valuable, perhaps the norms could be changed to allow for three to five days for training laboratory, thus extending the benefits of a greater training impact upon members of the change-agent team and their colleagues.

There could have been advanced laboratory training sessions for the change-agent teams. During the second year of the project the teams themselves had no laboratory experiences for improving their own processes, although there were efforts made by the PEC staff to help the change-agent team in System B work through its authority problems with the new superintendent. The members of the change-agent team in School System A felt the need for additional training but never implemented their own diagnosis.

Maximum learning requires experience in the full sequence of the dialogue-inquiry-action model described and illustrated on pages 6-10. The teams had only limited opportunity for experiencing the full cycle. There were few instances in which reality changes came about as a result of the problem-solving activities. The administrative additions made in System A after a training laboratory was a success experience for the team and their colleagues as was the training day for the high school faculty in System B. These were probably the most visible successes of any of the three teams. Had there been a greater number of successful experiences in carrying through the full process, the training would have been more effective.

More Meaningful Data Analysis

There could have been more focused training sequences for change-agent team members

involving them in the collection and interpretation of data. Involvement through training and action in planning data collection would have given teams an opportunity to determine questions to which they wanted answers. Data analysis would then have likely become more relevant and useful to the change-agent team.

Providing Additional Technical Consultation

The PEC staff could have suggested and encouraged the use of consultants in the implementation of various changes selected by the change-agent teams: Introduction of Independent Study, System A; development of a PERT chart for the conversion from High School A to High School B in two years, System B; implementation of Non-Graded and Unitized Elementary Schools, System C. Systems A and C did use consultants on two occasions. Additional attention could have been given with profit, however, to enabling the teams to define needs, state questions, and utilize outside resources and consultant services.

Failures to Create Structural Changes

Creation of three new structures within the school systems were projected at the outset of the planned change project and were never realized. The development of a structure for environmental scanning or reconnaissance; introducing and operating such mechanism to find innovations in school environments (including neighboring schools, research and development centers, etc.) was projected as a functional outcome of the change-agent teams and might have been associated with a complementary mechanism within the Wisconsin Department of Public Instruction to provide basic information to the local school system upon request. This local mechanism coor-

minated with a state-wide facility is still believed to be important. Through systematic searching for innovations and gathering of information regarding their educational capabilities and applications, a school system could enrich its problem-solving cycle at the point of considering alternative innovations for changing the reality in a desirable direction. Such institutionalized mechanism would represent important facilitation structures for assuring continuous self-renewal of a school system. Competent personnel and budgetary allowances would be required for this type of structure.

Establishment of a mechanism within the school system for the continuous assessment of needs and problems that suggest changes in processes, new structures, and learning-teaching instrumentation was also projected. Such a mechanism would provide decision-makers with a rational basis for selecting and trying innovations that could be made visible through the reconnaissance in the scanning function described above. The change-agent teams have functioned in a preliminary and exploratory manner as the initiating structure of such a mechanism, but no system implemented a well designed structure during the course of the project.

Involving professional staff members and organizing an office within a school system to carry out the training function represents another potential structure that might have been initiated. Staff members operating as trainer-consultants could then be available to professional and student groups when confronted with the need to become more sensitive to their own functioning as a group, more aware of interpersonal relations, more thoughtful in introducing changes, and more skillful in applying a problem-solving approach to various situations. One school system considered the training of its present staff members at the outset of the project but was never able to carry it out due to a lack of allocated funds. School System A has this matter under advisement.

VI Summary

Two points can be made in summary, an observation from experience in changing the business-industrial type of organization and a limited but positive statement regarding the project. It is Likert's (1961) observation that neither the testing of a theory nor the shifting of an organization to a full-scale application of the theory can be hurried. There is no substitute for ample time to enable the members of an organization to reach a level of skillful and easy habitual use of new practices. He maintains that a period of two or three years is usually required to introduce a major change in an organization with less than 200 members and believes that in organizations with more than 200 or 300 employees an additional five or more years may be required to bring about substantial changes. Consequently additional time may be needed to determine the full effects of this project and it may be that an expectation of the two-year cycle is not sufficient for institutionalizing new structures and processes at a level of maximum effectiveness. It should probably be increased to at least four years of cooperative effort between an outside agency such as PEC and a school system to introduce and institutionalize new structure for change. Continuous effort over a period of time is required and a greater saturation of training is needed than occurred in any system, including System A.

There is some suggestive positive evidence regarding the relationship between innovativeness in a school system and the functioning of the change-agent team and the utilization of laboratory training with personnel. System A moved over a period of two years in its innovativeness two positions in rank order within the eight school systems sample, while its companion system, as far as size was concerned, lost in innovativeness. System A developed the most ideal conforming change-

agent team and made the greatest investment in training. This in itself suggests the value of the change-agent team and laboratory training.

Recommendations

It is the conclusion of the staff that while certain activities might have been done more effectively, the approach of PEC promises long-term lasting effects that a more highly engineered approach from the outside might not offer. The school is in an environment in which a result and usually a quick result is expected by a pragmatic society. More attention is needed to developing competencies in interpersonal relations and problem-solving skills which will give more substantive and lasting results in the future. These competencies represent the capital human resource for a better future. Those persons associated with school development should resist effort to make a show too quickly in favor of a less spectacular approach that emphasizes processes and the development of people.

The three change-agent teams have continued to function within their respective school systems after the completion of the Planned Change Project, thus demonstrating that members of these groups and school system officials believe there is value in the creation and maintenance of a structure for change within school systems. The authors recommend, as an alternative to the preservation of a status quo of questionable value in our schools, the creation of change-agent teams, adapted to meet the needs of individual school systems and evaluated as to function and purposes, and the use of laboratory training as developed and applied in the project described above.

Notes

¹The autoplasic versus the alloplastic is a major issue in the theory of instruction as presented by Richard M. Jones in his analysis of Jerome S. Bruner's emphasis upon the alloplastic. See Jones' Fantasy and Feelings in Education, New York: New York University Press, 1968, p. 109 and p. 123. Jones and Bruner apply the terms to growth of the individual. The present authors have adapted the concepts and applied them to system change phenomena in connection with the therapeutic model.

²A term used interchangeably with dialogue-inquiry-action in the text is "problem solving." Very few, if any, human situations can be reduced to a one-problem analysis. The actuality of problem solving requires the merging of cooperative inquiries and dialogue among group members. Since the formulation of a problem is only one step in the larger process of changing reality, the more descriptive term, "dialogue-inquiry-action," is preferred.

³The eleven items were as follows; some were added, some subtracted, in computing the total score as indicated:

SHOULD ONE:

- + 1. Tell colleagues what you really think of their work.
- + 2. Disagree with your superior if you happen to know more about the issue than he does.
- + 3. Push for new ideas, even if they are vague or unusual.
- + 4. Ask others to tell you what they really think of your work.
- + 5. Point out other people's mistakes, to improve working effectiveness.

- + 6. Try out new ways of doing things even if it's uncertain how they will work out.
- 7. Stay "cool"—keep your distance from others.
- + 8. Set up committees which bypass or cut across usual channels or lines of authority.
- 9. Be skeptical about accepting unusual or "way out" ideas.
- 10. Tell other people what they want to hear, rather than what you really think.
- +11. Trust others to be helpful when you admit you have problems.

The response "I feel you should," was scored 2; "I feel you should not" was scored 0; and "No feeling one way or the other" was scored 1. Psychometric data on a nearly identical index is presented in Hilfiker (1969).

⁴The eight items were as follows; some were added, some subtracted, in computing the total score, in the indicated manner. The wording of the five response categories was changed between 1967 and 1969 as indicated above.

- + 1. I find my job very exciting and rewarding.
- 2. I am just a cog in the machinery of this school.
- + 3. I feel involved in a lot of activities that go on in this school.
- 4. I do things at school that I wouldn't do if it were up to me.

2

- 5. I really don't feel satisfied with a lot of things that go on in this school.

- 6. In the long run, it is better to be minimally involved in school affairs.

+ 7. I have a lot of influence with my colleagues on educational matters.

+ 8. I feel close to other teachers in this school.

4

References

- Bell, Daniel. A summary by the Chairman. Daedalus, Toward the Year 2000: Work in Progress. Summer, 1967.
- Carlson, Richard M. "School Superintendents and the Adoption of Modern Mathematics: A Social Structure Profile," in Matthew B. Miles (ed.), Innovations in Education, New York: Teachers' College, Columbia University, 1964, pp. 329-342.
- Duhl, Leonard. Working session 1: Baselines for the future. Daedalus, Toward the Year 2000: Work in Progress. Summer, 1967.
- Erikson, Erik. Childhood and Society. New York: W. W. Norton and Co., 1963.
- Goodson, Max R., and Hammes, Richard. A Team Designed for School System Changing. (Theoretical Paper No. 11) Madison, Wisconsin: Research and Development Center for Cognitive Learning, The University of Wisconsin, 1968.
- Gouldner, Alvin W. "The Problem of Succession in Bureaucracy," in Robert K. Merton, Alisa P. Gray, Barbara Hockey, & Hanan C. Selvin, (eds.), Reader in Bureaucracy, Glencoe, Illinois: Free Press, 1952, pp. 339-351.
- Gouldner, Alvin W. Patterns of Industrial Bureaucracy, Glencoe, Ill.: Free Press, 1954.
- Harrison, Roger. "Training Designs for Inter-group Collaboration," Training News, Volume 11, No. 1, 1967.
- Hilfiker, Leo R. The Relationship of School System Innovativeness to Selected Dimensions of Interpersonal Behavior in Eight School Systems. (Technical Report No. 70) Madison: Wisconsin Research and Development Center for Cognitive Learning, The University of Wisconsin, 1969.
- Hilfiker, Leo R. A Profile of Innovative School Systems. Madison: Wisconsin Research and Development Center for Cognitive Learning, The University of Wisconsin, (in press).
- Jones, Richard M. Fantasy and Feelings in Education. New York: New York University Press, 1968.
- Likert, Rensis. New Patterns of Management. New York: McGraw-Hill Book Co., 1961.
- Pfeiffer, J. William, and Jones, John E. A Handbook of Structured Experiences for Human Relations Training. Iowa City, Iowa: University Associates Press, 1969.

of persons produced by the system should be compared with other training programs in plumbing. If the results of this kind of evaluation are positive, they will stabilize the change and insure its permanency.

Terminal Relationship

After the change agent has diagnosed, caused, evaluated and stabilized the desired change in client system, it must have a technique of departing which will not interrupt effected change. It is desirable that the change agent not allow the client system to rely totally upon it during the change process. It should attempt to build into the permanent structure of client system a substitute for change agent which will continue the work of change agent after its departure. However, this does not mean no relationship should ever exists between the two after the termination of active change efforts. This would depend upon how well the internal substitute had developed and the need of client system for continued external support. Sometimes this support may be dispensed through occasional consultation or examination.

AN ANALYSIS OF A MANAGED CHANGE IN AN EDUCATIONAL SETTING

An excellent example of a planned change in the educational arena was cited in the June 15, 1971 issue of Look Magazine. This situation is analyzed below, according to characteristics of planned change previously discussed in this paper.

Client System

Banneker Elementary School
Gary, Indiana
Student Population 300

Change Agent

Behavioral Research Laboratories, Inc.
Palo Alto, California

Relationship Between Change Agent and Client System

BRL, a professional-commercial cooperation that was a pioneer in producing programmed textbooks, has been contracted by the school board to run an entire elementary school for a period of three years. BRL pays the salaries of all teachers, custodians, and secretaries, and is also responsible for the cost of insurance premiums, laundry, utilities and educational supplies. It will receive \$2400 for each pupil if the experiment is successful, but it must refund the school board all funds if project proves unsuccessful.

Recognition of Need for Change

Traditional public education has failed in the inner-city Banneker Elementary School. Questions such as "Why hasn't this school done a better job?" and "Why do its students go backward rather than forward with every additional year in school?" have been posed. These queries warrant answers and they can only be found in change.

Characteristics of Client System

1. The school ranks 31st among the city's 33 elementary schools in reading and mathematics achievement.
2. Fourth graders scored 3.1 on IQ and basic-skills national tests.
3. Sixth graders scored 4.75 on IQ and basic-skills national tests.

Driving Forces

1. Dr. Gordon L. McAndrew, Superintendent of Schools, wants to try innovative techniques to find solutions to problems in the schools.
2. BRL's performance oriented contract.
3. Students enjoy the program.
4. Parents are very much interested in program.

Restraining Forces

Gary Teachers Union Complains About

1. The teacher-pupil ratio
2. The use of neighborhood women as aids in place of teachers.

Additional complaints centered around the State Superintendent's cutting off aid to the school and the dehumanizing aspects of the program.

Working Toward Change

To make a change in the client system the change agent is breaking from traditional educational methodology. Changes initiated by the change agent to effectuate changes in the achievement of learners in client system are as follows:

1. The school is considered a curriculum center.
2. Instead of teachers, the staff consists of curriculum managers with advanced degrees, assistant curriculum managers who are certified teachers and neighborhood mothers who serve as learning supervisors.
3. There are no grades or classes in traditional sense.
4. Children are tested in mathematics and reading ability and then grouped in class-size units that change regularly according to student's need and ability.
5. Students are constantly reshuffled and each has an individualized schedule.
6. Programmed teaching materials constitute the heart of the curriculum.

Evaluation

Students are tested continuously to measure their achievement and programmed materials are revised as need arises.

Terminal Relationship of Change Agent

Under terms of its contract BRL must turn over operation of program to Gary if it proves successful.

METHOD

Sample

Due to the complexities of recording physiological parameters from four individuals simultaneously during performance in the simulation, the sample was quite small. Fifteen undergraduate males at Johns Hopkins were paid to participate. Five different subjects participated in each game session. Heart rate was recorded simultaneously from four subjects in each game. However, one recording was terminated due to electrode failure during game one. Thus, complete heart rate records were available for eleven subjects.

Procedure

The five subjects sat at one end of a large table in a conference room. A causal setting was desired, similar to a classroom, not like a laboratory. Three sessions were played with three different groups of five subjects each. The social simulation game used for each session was Ghetto (1970). Heart rate was monitored on four subjects during each session. A Narco Bio-Systems Physiograph^R Six was used for recording purposes. Hardwire recordings were taken from three subjects, the wires leading under large, closed doors immediately behind the subjects. Telemetric recording was taken from one subject in each game session. Surface electrodes were used on all Ss. The two recording electrodes were attached to the upper distal surface of each subject's arm. The reference electrode was attached to the proximal surface of the left forearm. No reference electrode was necessary on the telemetered subject.

References

- Abelson, Robert P. "Simulation of Social Behavior." In Handbook of Social Psychology. Cambridge, Mass: Addison-Wesley, 1969.
- Anderson, L. R., and Fishbein, M. "Prediction of Attitude from the Number, Strength, and Evaluative Aspects of Beliefs about the Attitude Object: A Comparison of Summation and Congruity Theories," In M. Fishbein, Readings in Attitude Theory and Measurement. John Wiley and Sons, New York, 1967, pp.437-443.
- Antrobus, J. S. (Ed.) Cognition and Affect. Boston: Little, Brown and Company, 1970.
- Arnold, M. (Ed.) Feelings and Emotions. New York: Academic Press, 1970.
- Black, P. (Ed.) Physiological Correlates of Emotion. New York: Academic Press, 1970.
- Boocock, Sarane S. and Coleman, James S. "Games with Simulated Environments in Learning." Sociology of Education. Summer, 1966.
- Boocock, Sarane S. Schild, E. O. and Stoll, Clarice S. "Simulation Games and Control Beliefs." The Center for Social Organization of Schools Report No. 10, The Johns Hopkins University. November, 1967.
- Boocock, Sarane S. and Schild, E. O. (eds.) Simulation Games in Learning. Beverly Hills, Calif: Sage, 1968.
- Boocock, Sarane S. "Instructional Games." Encyclopedia of Education. New York: Macmillan Company, forthcoming.
- Coleman, James S. The Adolescent Society. New York: Free Press, 1961. Chapter XI.
- Coleman, James S. "Analysis of Social Structures and Simulation of Social Processes with Electronic Computers." In Guetzkow, Harold S. (ed.) Simulation in Social Science. Englewood Cliffs, New Jersey: Prentice-Hall, 1962, pp. 61-67.
- Coleman, James S. et al. (eds.) Simulation Games and Learning Behavior, Parts I and II, special issues of American Behavioral Scientist, Volume 10, October and November, 1966.
- Coleman, James S. "Learning through Games." National Education Association Journal 56 (1) January, 1967, pp.69-70.

- Coleman, James S. "Game Models of Economic and Political Systems." Pp. 30-44 in The Study of Total Societies. Samuel Z. Klausner (ed.) New York: Anchor Books, 1967 b.
- Coleman, James S. "Games--New Tools for Learning." Scholastic Teacher 15 (8), November, 1967 c.
- Coleman, James S. "Simulation Games and Social Theory." American Behavioral Scientist 12 (July-August), 1968, pp.2-6.
- Coleman, James S. "Social Processes and Social Simulation Games" in Simulation Games in Learning, edited by Sarane S. Boocock and E. O. Schild, 1968, Sage Publications, Inc., Beverly Hills, Calif.
- Ewert, O. "The Attitudinal Character of Emotion" in Feelings and Emotions by Magda Arnold, pp. 233-240. New York: Academic Press, 1970.
- Fishbein, M. (Ed.) Readings in Attitude Theory and Measurement. New York: John Wiley & Sons, Inc., 1967.
- Fishbein, M. and B. H. Raven. "The AB Scales: An Operational Definition of Belief and Attitude" in Readings in Attitude Theory and Measurement by Martin Fishbein, pp. 183-189. New York: John Wiley & Sons, 1967.
- Gamson, W. A. Simsoc: Simulated Society. (with Instructors Manual) New York: Free Press, 1969.
- Ghetto, Western Publications, New York, 1970.
- Greenwald, A. G., "The Open-Mindedness of the Counterattitudinal Role Player," Journal of Experimental Social Psychology, Vol. 5, 375-388, 1969.
- Greenwald, A. G. "When Does Role Playing Produce Attitude Change," Journal of Personality and Social Psychology, Vol. 16, No. 2, 214-219.
- Greenwald, A., Brock, T., and, Ostrom, T. Psychological Foundations of Attitudes, Academic Press, New York, 1968.
- Guetzkow, Harold (ed.) Simulation in Social Science: Readings. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962.
- Inbar, Michael. "Development and Educational Use of Simulations: An Example -- 'The Community Response Game.'" Scientia Paedagogica Experimentalis IV (1) 1969. pp. 5-44.

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ABSTRACT

The relationship between internal-external control of reinforcement and attraction to others who vary in susceptibility to persuasion was investigated. Internals are defined as persons who believe that reinforcement is contingent on their behavior, while externals are those who believe that reinforcement is independent of their actions and is controlled by chance or powerful others. Attraction was assessed after subjects were differentially successful in changing the opinions of two confederates. Results on a behavioral measure support the hypothesis that internals are more attracted to others they are able to influence, whereas externals do not differentiate their attraction on the basis of others' persuasibility. However, on an attitudinal measure, there was a trend for internals to be more attracted to the confederate with whom they were less successful. A possible resolution of these results is discussed. (Author/TL)

Internal-External Control and Others' Susceptibility to
Influence as Determinants of Interpersonal Attraction¹

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While considerable research has focused on the generality and correlates of individual differences in susceptibility to persuasive communications (Hovland & Janis, 1959), relatively few studies have investigated the perception and evaluation of individuals who differ on this dimension. Individuals who are perceived to be highly persuasible may be evaluated differently than less persuasible individuals for several reasons. For example, a number of studies have shown that one factor which influences a person's attraction to others is the extent to which they agree with his attitudes (Newcomb, 1961; Byrne, 1969). In general, individuals with similar attitudes are more attracted to each other than are those with opposing attitudes. Extending these findings, it is possible that individuals who can be persuaded to agree with one's own attitudes would be perceived as more attractive due to an increase in the proportion of similar attitudes. On the other hand, a highly persuasible individual might be perceived as an ingratiation and therefore evaluated less favorably, although the relationship between attraction and opinion conformity as an ingratiation tactic appears to be quite complex (Jones, 1964). A third possibility, and one that was investigated in the present study, is that the relationship between attraction and others' persuasibility is determined, in part, by certain personality characteristics of the perceiver. The purpose of this study was to examine the relationship between the personality construct of internal-external control of reinforcement and attraction to others who differ in their susceptibility to social influence.

The construct of internal-external control of reinforcement (I-E) was developed from social learning theory (Rotter, 1954), and refers to differences

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in the expectancy that reinforcement is causally related to one's own behavior. At one end of the I-E dimension are individuals who believe that reinforcement is contingent upon their behavior (internals), while those at the other end believe that reinforcement is independent of their actions and is controlled by luck, chance, or powerful others. Several clusters of I-E studies have focused on the general hypothesis that internals are more likely than externals to engage in behaviors designed to control their outcomes. Supportive of this notion are studies showing an internal orientation to be positively associated with civil rights activities among Negro college students (Gore & Rotter, 1963; Strickland, 1965; Escoffery, 1967), protest behaviors concerning the Vietnam war (Carlson, James, & Correre, 1966), membership and participation in labor unions in Sweden (Seeman, 1966), and willingness to become involved in activities directed at alleviating alleged personal problems (Phares, Ritchie, & Davis, 1968). More closely related to the present research, Davis and Phares (1967) reported that internals tended to ask more questions about a person whom they expected to persuade than externals. Similarly, Lefcourt and Wine (1969) found that internal interviewers made more frequent eye movements and reported more observations of their interviewees than external interviewers. In another study, internals were less inclined to reciprocate interpersonal evaluations in an apparent attempt to control the nature of the evaluations they received from others (Jones & Shrager, 1968). Taken as a whole, these studies indicate that individuals who believe they are responsible for the reinforcements they receive are more likely to make active attempts to control these events.

If it is true that internals are more concerned about controlling reinforcement, as the aforementioned research suggests, it seems reasonable that they would be attracted to others who enhance their potentiality for control. Thus, a highly persuasive individual would provide the internal an opportunity to exercise a greater degree of control over his outcomes and would therefore be perceived as more attractive than one who resists his influence attempts.

Externals, on the other hand, should be less affected by the degree to which their persuasion attempts are successful since they tend to believe that outcomes are independent of their behavior. In other words, persuasibility, for externals, should be an irrelevant dimension in evaluating another individual since any changes in his behavior are viewed as independent of the external's own actions. Thus the aim of this study was to test the hypothesis that internals are more attracted to persons whom they can persuade than to those who resist their influence attempts, whereas externals are less likely to differentiate their attraction toward others on the basis of persuasibility.

Method

Subjects

The 23-item I-E scale (Rotter, 1966) was administered to several large introductory psychology classes at Iowa State University and was scored in the internal direction. From this pool, 15 males who scored in the upper 25% (internals, range 17-23) and 15 males who scored in the lower 25% (external, range 2-10) of the I-E distribution served as Ss in the study.

Procedure

Ss reported individually to the laboratory and in the order in which they signed up for the experiment. E had no knowledge of their scores on the I-E scale at the time of the experiment. Upon arrival S was taken to the experimental room which was partitioned into three sections so that no person in any section was able to see into the other sections. He was told that two other students, who were actually confederates, would be participating in the study with him. The first confederate was present in the room prior to Ss arrival. A few minutes after S was seated, the third participant (confederate) arrived and the experimenter then stated that this was a communication experiment and the purpose was to see how well people can communicate when they are

not able to see each other. Ss were then asked to fill-out a 15-item fraternity opinion questionnaire. A typical item was: "Do you think poor or disadvantaged students are discriminated against by fraternities?" Ss responded by indicating "yes" or "no." After the questionnaires were completed and collected E left the room under the pretext of scoring them. Ss were instructed not to talk while E was absent and reports from confederates confirmed that no S ever attempted conversation. When E returned, Ss were told that one of them would be randomly selected to serve as the communicator and the other two would be the listeners. In order to imply chance selection of S as the communicator, Ss drew a slip of paper from a box designating their role. The drawing was rigged by labeling all slips "communicator." Upon designation of S as communicator, the two confederates were identified as "Subject A" and "Subject B." Instructions were given to the effect that the communicator would present arguments or reasons for the answers he gave to the items on the fraternity questionnaire. Subjects A and B were told to listen to each of the communicator's arguments and then indicate their agreement or disagreement with the item by writing "yes" or "no" on a slip of paper which would be passed to the communicator. At this point, S was taken to another room by the experimenter in order that he be given "further instructions about the details of the procedure." S was then told that the real purpose of the experiment was to see how well he could persuade the other Ss to change their opinions about fraternities. He was given an answer sheet, previously filled out by the experimenter, showing his responses and those of the confederates to eight of the 15 items of the fraternity questionnaire. Those eight items, he was told, were the ones on which the two other Ss had the same opinions, and therefore would be the targets of his persuasion attempt. In addition, he was given a set of eight prepared arguments, corresponding to the eight items, to use in attempting to persuade the other Ss. He was told that the other Ss did not know the true purpose of the experiment, nor did they know that he would

be using prepared arguments. As soon as S understood the procedure he was taken back to the experimental room to present his arguments. Responses of confederates were predetermined so that Subject A was successfully persuaded six out of eight times, while Subject B was successfully persuaded on only two out of eight attempts.

Since attitudinal similarity has been shown to be an important determinant of interpersonal attraction (c.f., Byrne, 1969) an attempt was made to equate for the degree of similarity in attitudes towards fraternities between S and the two confederates. The answer sheet given the subject prior to his persuasion attempts showed that both confederates disagreed with his opinions on four of the items and agreed with him on the remaining four. On these latter four items, in which there was initial agreement, S was required to argue for a position counter to his real attitude. Thus, S argued for the opposite opinion expressed by the two confederates, even when they initially agreed with him. By using this procedure it was possible to insure that attitudinal similarity would be equated at the end of the persuasion attempt. Even though one confederate changed his attitudes more than the other, both of them agreed with four of the S's attitudes (50% similarity) at the conclusion of his arguments.

Attraction Measures

After the argument for the final item was presented, the confederates were asked to leave the room and wait outside. E made sure that S understood the differential responses of the confederates by asking him to score his answer sheet. S then rated the two confederates, identified as "Subject A" and "Subject B," on separate nine-item questionnaires. The ratings were done on a seven-point scale and concerned such attributes as intelligence, knowledge of current events, grades at Iowa State, and success in getting along with others. The attraction measure consisted of two items embedded in the

questionnaire on which the confederates were rated for liking and desirability as a work partner. These items are similar to those used as attraction measures in previous research (Byrne & Nelson, 1965; Byrne & Clore, 1966).

As a final part of the experiment, S was taken outside and asked to sit at a table. The table was approximately 18 feet in length and was located about 12 feet from the door of the experimental room. Confederates A and B were already seated at opposite ends of the table and two empty chairs were positioned in such a way that S was forced to sit next to one or the other confederate. Before S sat down, the confederates were identified by E casually stating that he wished to make sure which subject was "A" and which was "B." Subjects A and B then nodded as they were pointed out. To control for any physical attractiveness effects or directional seating tendencies the confederate roles as A and B and their seating positions were counterbalanced. When seated at the table, S was asked to fill out a form for experimental credit toward his course grade and was then excused. Previous research has indicated that physical distance between individuals may serve as an index of attraction. For example, Mehrabrian (1968) found an inverse relationship between seating distance and liking. Thus, the second measure of attraction consisted of S's seating preferences in relation to the two confederates.

Results

Effectiveness of the Persuasibility Manipulation

In order to check the effectiveness of the persuasibility manipulation, subjects were asked to rate on a seven-point scale the extent to which the two confederates changed their opinions about fraternities. Mean rating of the high persuasibility confederate (H/P) was 5.93, while for the low persuasibility confederate (L/P) the mean was 2.40 ($F = 162.17, 1/28df, p < .01$), indicating that subjects correctly perceived differential amounts of attitude change by the two confederates.

Attitudinal Measure of Attraction

Similar to the procedure employed by Byrne and his associates (Byrne, 1969) S's ratings of how much they would like the other person and his desirability as a work partner were summed to yield an attraction score. Mean attraction ratings of the HiP and LoP confederates by internals and externals are shown in Table 1. A 2 X 2 repeated measures analysis of variance (Winer, 1962) indicated that, although the I-E by Persuasibility interaction did not reach significance, there was a trend for internals to differentiate their attraction ratings of the confederates to a greater extent than externals ($F = 3.60$, 1/28 df, $p < .10$). However, the direction of the internals' ratings was opposite to the predictions, since they tended to be more attracted to the LoP than HiP confederate.

Consistent with this latter result were significant I-E by Persuasibility interactions on ratings of the confederates' intelligence ($F = 6.40$, 1/28 df, $p < .05$) and knowledge of current events ($F = 6.32$, 1/28 df, $p < .05$). On these items internals rated the LoP confederate as more intelligent and more informed about current events than the HiP confederate. Externals' ratings of the two confederates on intelligence and knowledge of current events were in the same direction but the magnitude of the differences were smaller.

Additional results, aside from the I-E effects, showed that the HiP, as contrasted to the LoP, confederate was rated as less intelligent ($F = 36.10$, 1/28 df, $p < .01$), less informed about current events ($F = 48.75$, 1/28 df, $p < .01$), makes poorer grades in college ($F = 21.35$, 1/28 df, $p < .01$), and is better able to get along with others ($F = 8.27$, 1/28 df, $p < .01$). There were no overall differences between the ratings of the two confederates' attractiveness or how happy they would be in a fraternity ($p > .10$).

Behavioral Measure of Attraction

The behavioral measure of attraction consisted of observing whether S sat next to the HiP or LoP confederate. Consistent with the prediction, internals say by the HiP confederate in 12 of 15 cases ($\chi^2 = 5.40$, 1 df, $p < .025$), in con-

trast to externals, who did so in only five of 15 cases ($\chi^2 = 1.67$, 1 df, $p > .10$). Comparing preferences for HiP versus LoP confederates by I-E produced a significant chi-square ($\chi^2 = 6.60$, 1 df, $p < .025$), indicating that seating preference depended on S's I-E status. Further analyses revealed no overall preference for the HiP versus LoP confederate ($\chi^2 = .47$, 1 df, $p > .25$). Thus, as indicated by the behavioral measure, internals tended to be more attracted to the person they were able to influence, whereas externals did not differentiate their seating choices on the basis of persuasibility.

Discussion

At first glance, the results of this study seem rather puzzling inasmuch as the data obtained from the behavioral measure of attraction provide support for the hypothesis, while the outcome of the attitudinal measure is in direct opposition to it. As predicted, internals preferred to sit next to the person they were successful in persuading whereas externals showed no significant preference for one confederate over the other. In contrast, on the attitudinal measure of attraction, internals tended to be more attracted to the confederate they were less successful in persuading than to the one who was highly persuasible, while again externals were less inclined to differentiate their attraction on the basis of others' persuasibility.

There are several possible explanations of the results. One is that internals perceived the low persuasibility confederate as more similar to themselves than the high persuasibility confederate. Previous research has indicated that internals are more resistant to influence than externals (Crowne & Liverant, 1963; Gore, 1962; Getter, 1966). In fact, Gore reported that internals tended to respond in the opposite direction of the experimenter's manipulative attempt. If resistance to influence is a part of the internals' self-concept, they would then see a greater degree of similarity between themselves and the low persuasibility confederate. Since perceived attitudinal similarity has been shown to be related

to attraction (Newcomb, 1961), internals therefore indicated greater liking for the low persuasibility confederate.

However, if perceived similarity were the only factor operating to produce attraction in this study it follows that internals would prefer to sit next to the low rather than high persuasible confederate. Of course, just the opposite occurred. Moreover, on the basis of perceived similarity, it might be expected that externals would be more attracted to the high than low persuasibility confederate. The attitudinal data, again, offer no support for this expectation. Thus, it may be that internals say they are more attracted to individuals who are similar to themselves in regard to resisting influence, but when they have to interact with others they prefer the individual who is susceptible to control. Internals may not particularly like highly persuasible individuals but nonetheless prefer to interact with them in order to maximize their potentiality of controlling outcomes. Even though internals may place greater value on the outcomes provided by low persuasibility others (as the attitudinal data suggests), they would also have a lower expectancy of obtaining these outcomes. In the framework of social learning theory (Rotter, 1954), a low expectation of obtaining valued reinforcements is analogous to anxiety. Thus, in order to avoid potentially anxiety-arousing situations, internals prefer not to interact with others who resist their control attempts.

The foregoing interpretation of the results of this study is similar to that offered by Jones and Daugherty (1959) in a study of the roles of complementarity and similarity in value and political orientation as determinants of attraction. In their study, a complementarity effect was found when subjects anticipated interaction with the other person. For example, subjects who scored high on the Mach IV Scale, evaluated a stimulus person with a similar orientation more negatively when they anticipated interaction with that person. However, when there was no anticipation of interaction neither complementarity nor similarity influenced subjects' evaluations. In other words,

References

- Byrne, D. Attitudes and attraction. In L. Berkowitz (Ed.), Advances in experimental social psychology. New York: Academic Press, 1969. Pp. 36-86.
- Byrne, D., & Clore, G. L., Jr. Predicting interpersonal attraction toward strangers presented in three different stimulus modes. Psychonomic Science, 1966, 4, 239-240.
- Byrne, D., & Nelson, D. Attraction as a linear function of proportion of positive reinforcements. Journal of Personality and Social Psychology, 1965, 1, 659-663.
- Carlson, H. J., James, W. H., & Correre, D. E. Attitudes on Vietnam, factual information and internal control. Paper read at Midwestern Psychological Association, Chicago, 1966.
- Crowne, D. P., & Liverant, S. Conformity under varying conditions of personal commitment. Journal of Abnormal and Social Psychology, 1963, 66, 547-555.
- Davis, W. L., & Phares, E. J. Internal-external control as a determinant of information-seeking in a social influence setting. Journal of Personality, 1967, 35, 547-561.
- Ecoffery, A. S. Personality and behavior correlates of Negro American belief in fate-control. Paper read at Eastern Psychological Association, Washington, D. C., 1968.
- Gottter H. A. A personality determinant of verbal conditioning. Journal of Personality, 1966, 34, 397-405.
- Gore, P. M. Individual differences in the prediction of subject compliance to experimental bias. Unpublished doctoral dissertation, Ohio State University, 1962.
- Gore, P. M., & Rotter, J. B. A personality correlate of social action. Journal of Personality, 1963, 31, 58-64.

subjects preferred others who complemented their orientations only when they believed they would be interacting with these individuals. Likewise, in the present study, internals preferred the confederate who complemented their I-E expectancy (i.e., high persuasible confederate), but only when they anticipated interaction with him. Prior to the behavioral measure, it is quite likely that subjects did not anticipate any face-to-face contact with the two confederates, and therefore complementarity was not a determinant of their attraction responses on the attitudinal measure. In fact, under these circumstances, perceived similarity seemed to play a greater role. Thus, the results of the present study suggest a reformulation of the original hypothesis. When internals anticipate interaction with others, they prefer an individual who is susceptible to influence. However, when they are asked to indicate their liking for others in the abstract, they prefer individuals who are similar to themselves. While this interpretation of the results seems plausible it is, nevertheless, post hoc. Additional research more directly manipulating anticipation of interaction and perception of similarity would be useful in explicating the relationship between I-E and interpersonal attraction, and would more generally facilitate our understanding of the relative effects of complementarity and similarity on evaluations of others.

Hovland, C. I., & Janis, I. L. (Eds.). Personality and persuasibility. New Haven, Conn.: Yale University Press, 1959.

Jones, E. E. Ingratiation: a social psychological analysis. New York: Appleton-Century-Crofts, 1964.

Jones, E. E., & Daugherty, B. M. Political orientation and the perceptual effects of anticipated interaction. Journal of Abnormal and Social Psychology, 1959, 59, 340-349.

Jones, S. C., & Shrauger, J. S. Locus of control and interpersonal evaluations. Journal of Consulting and Clinical Psychology, 1968, 32, 664-668.

Lefcourt, H. M., & Wine, J. Internal-external control of reinforcement and the deployment of attention in experimental situations. Canadian Journal of Behavioral Science / Rev. Canad. Sci. Comp., 1, 1969.

Mehrabian, A. Relationship of attitude to seated posture, orientation, and distance. Journal of Personality and Social Psychology, 1968, 10, 26-30.

Newcomb, T. M. The acquaintance process. New York: Holt, Rinehart, and Winston, 1961.

Phares, E. J., Ritchie, D. E., & Davis, W. L. Internal-external control and reaction to threat. Journal of Personality and Social Psychology, 1968, 10, 402-405.

Rotter, J. B. Social learning and clinical psychology. Englewood-Cliffs: Prentice-Hall, 1954.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, (1, Whole No. 609).

Socorn, M. Alienation, membership, and political knowledge: a comparative study. Public Opinion Quarterly, 1966, 30, 353-367.

Strickland, B. R. The prediction of social action from a dimension of internal-external control. Journal of Social Psychology, 1965, 65, 353-358.

Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.

Footnote

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Table 1.

Attraction Scores for the High and Low Persuasibility

Confederates by Internals and Externals

	Attraction Scores	
	Internals	Externals
High persuasible confederate		
N	8.00	8.60
SD	1.71	1.71
Low persuasible confederate		
N	9.87	8.47
SD	1.93	1.02

Instructions for Part II

We would like to know your opinion about the results of certain things. For example, what happens if you get drafted? Do you get sent to war? Get hurt? And so on. We are all aware that good and bad things result from events. Since most people are different, we need your personal opinions.

On the following pages, we have written incomplete sentences about different events. Below these are lists of different endings for each sentence. After each ending are numbers from 1-7 corresponding to the likelihood that the ending would happen if the thing mentioned in the first part of the sentence happened. We would like you to use the following rule in answering.

Always refer to the categories listed vertically on the righthand side of each page above each number. Circle 1 if there is no chance at all of the second event following the first--if it never happens; circle 2 if there is a small chance of the second thing following the first; circle 3 if there is some chance of the second thing following the first; circle 4 if the second thing may happen, but probably would not; circle 5 if the second thing mentioned probably would happen; circle 6 if the second thing almost always follows the first; circle 7 if the second thing always follows the first--with no exceptions.

The above rule should be applied to each statement. The following example will show more clearly how it should be used.

Example:

	No Chance	Small Chance	Some Chance	Probably Not	Probably Would	Almost Always	Always
If you drive fast all the time, you:							
a) will have an accident	1	2	3	4	5	6	7
b) will get a speeding ticket	1	2	3	4	5	6	7
c) get lower gas mileage	1	2	3	4	5	6	7
d) hold up other traffic	1	2	3	4	5	6	7

Begin reading sentences on the following pages, read each ending, and decide what number to circle that corresponds to the desired likelihood of the ending following the statement.

If you have any questions, ask the monitor. When you are through, give your booklet to the monitor.

No Chance	Small Chance	Some Chance	Probably Not	Probably Would	Almost Always	Always
-----------	--------------	-------------	--------------	----------------	---------------	--------

If you lived in a ghetto, you would:

- | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|
| 1. feel secure | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. have money | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. finish high school | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. improve the neighborhood | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. make a comfortable living | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. get robbed | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. be deprived | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. have a good job | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. steal from others | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. have control over your future | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

If you were on welfare in a ghetto, you would:

- | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|
| 11. be responsible for your children | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. try to get off welfare | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. help improve the neighborhood | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

If you were a thief in a ghetto, you would:

- | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|
| 14. lose the respect of others | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. continue stealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. be sent to jail | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. have a police record | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. feel secure | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

If you were to work on community action groups
in a ghetto, you could:

	No Chance	Small Chance	Some Chance	Probably Not	Probably Would	Almost Always	Always
19. improve housing	1	2	3	4	5	6	7
20. improve the schools	1	2	3	4	5	6	7
21. decrease crime	1	2	3	4	5	6	7

APPENDIX B

I. Mood Adjective Checklist (MACL)

II. Modified Adjective Checklist (MCL)

The Mood Adjective Check List

Each of the following words describes feelings or mood. Please use the list to describe your feelings at the moment you read each word. If the word definitely describes how you feel at the moment you read it, circle the double check vv to the right of the word. For example, if the word is relaxed and you are definitely feeling relaxed at the moment, circle the vv as follows:

relaxed **(vv)** v ? no (This means you definitely feel relaxed at the moment.)

If the word only slightly applies to your feelings at the moment, circle the single check v as follows:

relaxed vv **(v)** ? no (This means you feel slightly relaxed at the moment.)

If the word is not clear to you or you cannot decide whether or not it applies to your feelings at the moment, circle the question mark as follows:

relaxed vv v **(?)** no (This means you cannot decide whether you are relaxed or not.)

If you definitely decide the word does not apply to your feelings at the moment, circle the no as follows:

relaxed vv v ? **(no)** (This means you are definitely not relaxed at the moment.)

Work rapidly. Your first reaction is best. Work down the first column, then to the next. Please mark all words. This should take only a few minutes. Please begin.

angry	vv	v	?	no
clutched up	vv	v	?	no
carefree	vv	v	?	no
elated	vv	v	?	no
concentrating	vv	v	?	no
drowsy	vv	v	?	no
affectionate	vv	v	?	no
regretful	vv	v	?	no
dubious	vv	v	?	no
boastful	vv	v	?	no
active	vv	v	?	no
defiant	vv	v	?	no
fearful	vv	v	?	no
playful	vv	v	?	no
overjoyed	vv	v	?	no
engaged in thought	vv	v	?	no
sluggish	vv	v	?	no

kindly	vv	v	?	no
sad	vv	v	?	no
skeptical	vv	v	?	no
egotistic	vv	v	?	no
energetic	vv	v	?	no
rebellious	vv	v	?	no
jittery	vv	v	?	no
witty	vv	v	?	no
pleased	vv	v	?	no
intent	vv	v	?	no
tired	vv	v	?	no
warmhearted	vv	v	?	no
sorry	vv	v	?	no
suspicious	vv	v	?	no
self-centered	vv	v	?	no
vigorous	vv	v	?	no

General Affective Condition

Reference Point in Treatment

	(What's happening, What's being said, etc.)
Subject _____	Observation _____

	Yes	So-So	No
angry	_____	_____	_____
elated	_____	_____	_____
concentrating	_____	_____	_____
sluggish	_____	_____	_____
fearful	_____	_____	_____
overjoyed	_____	_____	_____
active	_____	_____	_____
sad	_____	_____	_____
skeptical	_____	_____	_____
jittery	_____	_____	_____
pleased	_____	_____	_____
sorry	_____	_____	_____
suspicious	_____	_____	_____
self-centered	_____	_____	_____

APPENDIX C

- I. Total Game Heart-Rate Statistics
- II. Mood Adjective Checklist Factor Scores and Modified Checklist Scores for all subjects in Games 2 and 3.
- III. Attitude change scores for all subjects for all games.

Games 1, 2, 3 - Heart-Rate Data (ACI)

Game 1

<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Intercorrelation Matrix</u>		
					<u>Subject</u>		
					<u>1</u>	<u>2</u>	<u>3</u>
1	81.9	87	8.0	1	1.000	.141	.437
2	83.1	87	174.9	2		1.000	.238
3	76.0	87	22.6	3			1.000

Game 2

<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1	83.0	125	12.0	1	1.000	.242	.118	.098
2	60.2	125	41.4	2		1.000	.104	.168
3	86.0	125	185.4	3			1.000	-0.004
4	75.8	125	7.1	4				1.000

Game 3

<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1	88.9	125	15.0	1	1.000	.270	-0.111	-0.199
2	79.8	125	13.2	2		1.000	.172	.051
3	80.9	125	12.8	3			1.000	.371
4	73.4	125	11.0	4				1.000

Subject 1, Game 2 (ACII)

<u>Factors</u>	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(01) ^a	00(02)	00(01)
2. Anxiety	00(03)	00(02)	00(02)
3. Surgency	04() ^b	07() ^b	02() ^b
4. Elation	02(07)	07(04)	05(05)
5. Concentration	08(03)	09(03)	02(03)
6. Fatigue	09(01)	09(01)	09(01)
7. Activation	00(02)	08(02)	00(02)
8. Social Affection	02() ^b	00() ^b	00() ^b
9. Sadness	00(02)	00(05)	00(02)
10. Skepticism	00(04)	00(03)	00(04)
11. Egotism	00(01)	00(01)	00(02)
12. Sum of 3, 4, 7	6	22	7

^a00(01) - values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bscores for these factors were not recorded on the MCL.

Subject 2, Game 2

<u>Factors</u>	<u>Period</u>		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(02) ^a	02(01)	04(02)
2. Anxiety	05(02)	02(02)	02(03)
3. Surgency	04() ^b	03() ^b	03() ^b
4. Elation	02(03)	07(03)	04(05)
5. Concentration	08(03)	09(03)	09(03)
6. Fatigue	00(01)	00(01)	00(01)
7. Activation	06(01)	05(01)	08(02)
8. Social Affection	03() ^b	02() ^b	00() ^b
9. Sadness	00(02)	03(02)	00(04)
10. Skepticism	08(05)	07(02)	08(04)
11. Egotism	03(01)	05(01)	06(01)
12. Sum of 3, 4, 7	12	15	15

^a00(01) - values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bscores for these factors were not recorded on the MCL.

Subject 3, Game 2

Factors	Period		
	1	2	3
1. Aggression	00(01) ^a	06(01)	00(02)
2. Anxiety	04(02)	06(03)	00(02)
3. Surgency	02() ^b	00() ^b	03() ^b
4. Elation	03(03)	00(03)	04(04)
5. Concentration	08(03)	09(03)	01(03)
6. Fatigue	00(01)	00(01)	02(02)
7. Activation	02(01)	06(01)	00(02)
8. Social Affection	03() ^b	00() ^b	04() ^b
9. Sadness	01(02)	01(01)	02(04)
10. Skepticism	01(04)	01(03)	00(03)
11. Egotism	04(01)	00(01)	00(01)
12. Sum of 3, 4, 7	7	6	7

^a00(01) - values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores

^bscores for these factors were not recorded on the MCL.

Subject 4, Game 2

Factors	Period		
	1	2	3
1. Aggression	00(01) ^a	03(01)	06(02)
2. Anxiety	08(02)	08(03)	02(04)
3. Surgency	04() ^b	00() ^b	00() ^b
4. Elation	03(06)	00(06)	00(03)
5. Concentration	06(02)	06(03)	03(03)
6. Fatigue	00(01)	09(01)	09(01)
7. Activation	04(01)	00(02)	00(01)
8. Social Affection	04() ^b	00() ^b	00() ^b
9. Sadness	00(03)	08(02)	07(03)
10. Skepticism	07(02)	05(02)	02(03)
11. Egotism	07(01)	00(01)	00(01)
12. Sum of 3, 4, 7	11	00	00

^a00(01) - values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bscores for these factors were not recorded on the MCL

Subject 5, Game 3

Factors	Period		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(01)	00(01)	00(01)
2. Anxiety	06(03)	00(03)	00(02)
3. Surgency	00() ^b	04() ^b	04() ^b
4. Elation	01()	04()	04()
5. Concentration	06(03)	09(03)	00(03)
6. Fatigue	00(02)	00(01)	00(02)
7. Activation	02(01)	06(02)	00(01)
8. Social Affection	00() ^b	00() ^b	00() ^b
9. Sadness	01(02)	00(02)	00(02)
10. Skepticism	00(03)	00(02)	00(02)
11. Egotism	00(01)	00(02)	00(02)
12. Sum of 3, 4, 7	3	14	8

^a00(01)- Values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bScores for these factors were not recorded on the MCL.

Subject 5, Game 2

FACTORS	PERIODS		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(01) ^a	00(02)	00(02)
2. Anxiety	01(02)	01(03)	01(03)
3. Surgency	06() ^b	07() ^b	06() ^b
4. Elation	02(07)	02(03)	00(04)
5. Concentration	07(02)	07(02)	06(03)
6. Fatigue	06(01)	04(01)	06(01)
7. Activation	00(02)	00(02)	00(02)
8. Social Affection	04() ^b	04() ^b	04() ^b
9. Sadness	00(02)	00(04)	00(04)
10. Skepticism	00(02)	00(03)	00(04)
11. Egotism	00(01)	00(02)	00(02)
12. Sum of 3, 4, 7	8	9	6

^a00(01) - values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bScores for these factors were not recorded on the MCL.

Subject 1, Game 3

FACTORS	PERIOD		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(01) ^a	00(01)	00(01)
2. Anxiety	01(02)	02(03)	00(02)
3. Surgency	05() ^b	04() ^b	06() ^b
4. Elation	03(01)	06(06)	02(03)
5. Concentration	01(03)	05(02)	00(02)
6. Fatigue	01(01)	00(01)	03(03)
7. Activation	06(02)	06(03)	04(02)
8. Social Affection	06() ^b	03() ^b	03() ^b
9. Sadness	01(02)	00(02)	01(02)
10. Skepticism	03(02)	00(04)	00(02)
11. Egotism	04(02)	05(03)	00(03)
12. Sum of 3, 4, 7	14	16	12

^a00(01) - Values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bScores for these factors were not recorded on the MCL.

Subject 2, Game 3

FACTORS	PERIOD		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	01(02)	00(01)	00(01)
2. Anxiety	01(03)	00(03)	00(02)
3. Surgency	06() ^b	04() ^b	06() ^b
4. Elation	03(03)	05(06)	08(04)
5. Concentration	04(02)	03(03)	03(02)
6. Fatigue	02(02)	00(01)	00(02)
7. Activation	06(02)	05(03)	05(02)
8. Social Affection	05() ^b	03() ^b	00() ^b
9. Sadness	00(04)	00(02)	04(02)
10. Skepticism	01(04)	01(03)	00(02)
11. Egotism	01(02)	02(02)	04(01)
12. Sum of 3, 4, 7	15	14	19

^a00(01) - Values outside parentheses are MACL factor scores;
values in parentheses are MCL factor scores.

^bScores for these factors were not recorded on the MCL.

Subject 3, Game 3

Factors	Period		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(01)	06(03)	04(01)
2. Anxiety	04(03)	07(04)	06(02)
3. Surgency	04() ^b	00() ^b	00() ^b
4. Elation	02(03)	00(03)	02(03)
5. Concentration	06(03)	07(03)	08(02)
6. Fatigue	07(02)	03(01)	04(02)
7. Activation	02(01)	03(01)	00(01)
8. Social Affection	00() ^b	00() ^b	02() ^b
9. Sadness	00(02)	06(04)	00(02)
10. Skepticism	04(03)	06(04)	04(02)
11. Egotism	00(01)	00(01)	00(01)
12. Sum of 3, 4, 7	8	3	2

^a00(01) - Values outside parentheses are MACL factor scores; values in parentheses are MCL factor scores.

^bScores for these factors were not recorded on the MCL.

Subject 4, Game 3

Factors	Period		
	<u>1</u>	<u>2</u>	<u>3</u>
1. Aggression	00(01)	00(01)	00(02)
2. Anxiety	01(04)	00(03)	00(02)
3. Surgency	07() ^b	08() ^b	05() ^b
4. Elation	05(03)	05(09)	05(03)
5. Concentration	02(03)	00(03)	01(02)
6. Fatigue	01(03)	00(03)	03(02)
7. Activation	02(01)	08(01)	00(01)
8. Social Affection	03() ^b	02() ^b	02() ^b
9. Sadness	00(04)	00(02)	00(04)
10. Skepticism	01(04)	00(02)	00(04)
11. Egotism	00(01)	00(01)	00(01)
12. Sum of 3, 4, 7	14	21	10

^a00(01) - Values outside parentheses are MACL factor scores; values in parentheses are MCL factor scores.

^bScores for these factors were not recorded on the MCL.

Being Honest Is:
(low score - good; high score - bad)

(ACIII)

	<u>Subject</u>	<u>Pre-Game</u>	<u>Post Game</u>	<u>Change^a</u>
<u>Game 1</u>	1	3	15	+12
	2	3	16	+13
	3	9	15	+ 6
	4	3	14	+11
	5	6	6	0
	MEAN =	4.80	MEAN = 13.20	MEAN = 8.40
<u>Game 2</u>	1	6	6	+ 0
	2	3	9	+ 6
	3	6	10	+ 4
	4	3	4	+ 1
	5	3	5	+ 2
	MEAN =	4.20	MEAN = 6.80	MEAN = 2.60
<u>Game 3</u>	1	5	7	+ 2
	2	4	2	- 2
	3	6	13	+ 7
	4	3	12	+ 9
	5	3	9	+ 6
	MEAN =	4.20	MEAN = 8.60	MEAN = 4.40
MEAN FOR ALL SUBJECTS =		4.40	= 9.53	= 5.13

^aMean Change Scores are not based on absolute difference scores for each subject.

Being a Hard Worker Is:
(Low Score - good; High Score - bad)

	<u>Subject</u>	<u>Pre-Game</u>	<u>Post Game</u>	<u>Change</u>
<u>Game 1</u>	1	3	9	+ 6
	2	5	3	- 2
	3	6	9	+ 3
	4	3	15	+12
	5	9	3	- 6
	MEAN =	5.20	MEAN = 7.80	MEAN = 2.60
<u>Game 2</u>	1	6	6	0
	2	3	3	0
	3	6	9	+ 3
	4	3	5	+ 2
	5	6	8	+ 2
	MEAN =	4.80	MEAN = 6.20	MEAN = 1.40
<u>Game 3</u>	1	8	11	+ 3
	2	5	3	- 2
	3	4	8	+ 4
	4	4	3	- 1
	5	12	9	- 3
	MEAN =	6.60	MEAN = 6.80	MEAN = 1.20
MEAN FOR ALL SUBJECTS		= 5.53	= 6.93	= 1.40

Mean Change Scores are not based on absolute difference scores for each subject.

Being Irresponsible Is:
(Low Score - good; High Score - bad)

	<u>Subject</u>	<u>Pre-Game</u>	<u>Post Game</u>	<u>Change</u>
<u>Game 1</u>	1	21	7	-14
	2	20	18	+ 2
	3	18	18	0
	4	21	21	0
	5	21	18	+ 3
	MEAN =	20.20	MEAN = 16.40	MEAN = -1.80
<u>Game 2</u>	1	18	18	0
	2	21	21	0
	3	19	15	+ 4
	4	20	21	+ 1
	5	20	6	+14
	MEAN =	19.60	MEAN = 16.20	MEAN = 3.80
<u>Game 3</u>	1	12	14	+ 2
	2	19	18	- 1
	3	19	18	- 1
	4	18	12	- 6
	5	18	19	+ 1
	MEAN =	17.20	MEAN = 16.26	MEAN = -1.00
MEAN FOR ALL SUBJECTS		19.00	16.26	.33

Mean Change Scores are not based on absolute difference scores for each subject.

Being Immoral Is:
(Low Score - good; High Score - bad)

	<u>Subject</u>	<u>Pre-Game</u>	<u>Post Game</u>	<u>Change</u>
<u>Game 1</u>	1	21	20	- 1
	2	14	12	- 2
	3	16	15	- 1
	4	21	18	- 3
	5	17	18	+ 1
	MEAN =	17.80	MEAN = 16.60	MEAN = -1.20
<u>Game 2</u>	1	15	15	0
	2	21	18	- 3
	3	13	15	+ 2
	4	18	16	- 2
	5	15	19	+ 4
	MEAN =	16.40	MEAN = 16.60	MEAN = .20
<u>Game 3</u>	1	12	16	+ 4
	2	15	15	0
	3	13	18	+ 5
	4	16	9	- 7
	5	12	14	+ 2
	MEAN =	13.60	MEAN = 14.40	MEAN = .80
MEAN FOR ALL SUBJECTS		15.93	15.87	- .20

Mean Change Scores are not based on absolute difference scores for each subject.

Being Law-Abiding Is:
(Low Score - good; High Score - bad)

	<u>Subject</u>	<u>Pre-Game</u>	<u>Post Game</u>	<u>Change</u>
<u>Game 1</u>	1	3	14	+11
	2	3	3	0
	3	12	15	+ 3
	4	3	18	+15
	5	6	6	0
	MEAN =	6.54	MEAN = 11.2	MEAN = 5.80
<u>Game 2</u>	1	6	6	0
	2	3	6	+ 3
	3	10	9	- 1
	4	3	7	+ 4
	5	6	6	0
	MEAN =	6.56	MEAN = 6.80	MEAN = 1.20
<u>Game 3</u>	1	9	11	+ 2
	2	5	6	+ 1
	3	14	18	+ 4
	4	4	12	+ 8
	5	6	7	+ 1
	MEAN =	7.60	MEAN = 10.8	MEAN = 3.20
MEAN FOR ALL SUBJECTS		6.20	9.60	3.40

Mean Change Scores are not based on absolute difference scores for each subject.

APPENDIX D

- I. Means and Standard Deviations for Attitude Change Scores and Heart-Rate Data in Tables 11, 12, 13, and 14.
- II. Intercorrelations of Measures of Involvement and Heart-Rate Data for Games 2, 3, and 2 plus 3.

Game 1 - Heart-Rate Data and Attitude Change Scores

<u>VARIABLE</u>	<u>Mean</u> ^a	<u>S.D.</u> ^b
1. Honesty ^c	10.3	3.78
2. Hard Working	3.7	2.08
3. Irresponsible	5.3	7.57
4. Immoral	1.3	0.58
5. Law Abiding	4.7	5.68
6. H. R. Per. 1 ^d	83.3	3.51
7. Var. Per. 1 ^e	13.3	9.07
8. H. R. Per. 2	80.0	4.35
9. Var. Per. 2	93.3	0.15
10. H. R. Per. 3	77.0	4.35
11. Var. Per. 3	82.3	0.12
12. H. R. Game	80.3	3.78
13. Var. Game	68.6	92.39

^aBased on N = 3

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dHeart-rate, Period 1, etc.

^eVariance of heart-rate for Period 1, etc.

Game 2 - Heart-Rate Data and Attitude Change Scores

VARIABLE	MEAN ^a	S.D. ^b
1. Honesty ^c	2.8	2.75
2. Hard Working	1.2	1.50
3. Irresponsible	1.2	1.89
4. Immoral	1.8	1.26
5. Law Abiding	2.0	1.82
6. H. R. Per. 1 ^d	77.8	11.24
7. Var. Per. 1 ^e	11.5	4.80
8. H. R. Per. 2	76.2	12.20
9. Var. Per. 2	16.8	12.53
10. H. R. Per. 3	74.5	11.62
11. Var. Per. 3	154.2	250.62
12. H. R. Game	76.2	11.62
13. V-r. Game	61.2	83.85

^aBased on N = 3

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dHeart-rate, Period 1, etc.

^eVariance of heart-rate for Period 1, etc.

Game 3 - Heart-Rate Data and Attitude Change Scores

VARIABLE	MEAN ^a	S.D. ^b
1. Honesty ^c	5.0	3.55
2. Hard Working	2.5	1.29
3. Irresponsible	2.5	2.38
4. Immoral	4.0	2.94
5. Law Abiding	3.8	3.10
6. H. R. Per. 1 ^d	81.2	5.06
7. Var. Per. 1 ^e	15.0	2.58
8. H. R. Per. 2	81.2	8.22
9. Var. Per. 2	6.5	0.58
10. H. R. Per. 3	79.5	5.80
11. Var. Per. 3	11.5	2.38
12. H. R. Game	80.8	6.55
13. Var. Game	13.0	1.63

^aBased on N = 3

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dHeart-rate, Period 1, etc.

^eVariance of heart-rate for Period 1, etc.

All Games - Heart-Rate Data and Attitude Change Scores

VARIABLES	MEAN ^a	S.D. ^b
1. Honesty ^c	5.6	4.36
2. Hard Working	2.4	1.75
3. Irresponsible	2.8	4.14
4. Immoral	2.4	2.16
5. Law Abiding	3.4	3.41
6. H. R. per. 1 ^d	8.0	7.33
7. Var. Per. 1 ^e	13.3	5.27
8. H. R. Per. 2	79.1	8.61
9. Var. Per. 2	33.9	77.45
10. H. R. Per. 3	77.0	7.71
11. Var. Per. 3	82.7	160.90
12. H. R. Game	79.0	7.81
13. Var. Game	45.7	67.08

^aBased on N = 3

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dHeart-rate, Period 1, etc.

^eVariance of heart-rate for Period 1, etc.

Intercorrelations of Measures of Involvement
And Heart-Rate Data for Game 2

TABLE	1	2	3	4	5	6	7	8	9	10	11
S, E, A, P1 ^a	1.0										
S, E, A, P2	-.38	1.0									
S, E, A, P3	.18	.61	1.0								
H. R. Per. 1 ^b	-.94	.05	-.48	1.0							
Var. P1 ^c	-.73	.09	.13	.70	1.0						
H. R. P. 2	-.82	-.19	-.64	.97	.64	1.0					
Var. P2	.43	-.06	.83	-.56	.19	-.60	1.0				
H. R. P3	-.85	-.14	-.64	.98	.62	.99	-.63	1.0			
Var. P3	-.37	-.30	.08	.45	.89	.48	.40	.43	1.0		
H. R. Game	-.87	-.11	-.60	.99	.65	.99	-.61	.99	.45	1.0	
Var. Game	-.36	-.26	.14	.42	.89	.44	.44	.40	.99	.42	1.0

sum of the following factors for the respective periods: Surgency, Elation, and
ivation.

rt-rate, period 1, etc.

lance of heart-rate for period 1, etc.

VARIA

1. S,

2. S,

3. S,

4. H.

5. Var

6. H.

7. Var

8. H.

9. Var

10. H.

11. Var

^aThe sum
Activat

^bHeart-r

^cVarianc

Intercorrelations of Measures of Involvement
And Heart-Rate Data for Game 3

VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. S, E, A, P1 ^a	1.0										
2. S, E, A, P2	.87	1.0									
3. S, E, A, P3	.90	.59	1.0								
4. H. R. Per. 1 ^b	-.24	-.45	-.13	1.0							
5. Var. P.1 ^c	.36	.20	.54	-.74	1.0						
6. H. R. P.2	.09	-.16	.17	.94	-.64	1.0					
7. Var. P2	.63	.61	.62	-.86	.89	-.67	1.0				
8. H. R. P3	-.08	-.27	-.02	.98	-.76	.98	-.80	1.0			
9. Var. P3	-.46	-.53	-.41	.96	-.87	.83	-.97	.92	1.0		
10. H. R. Game	-.04	-.27	.06	.98	-.69	.99	-.75	.99	.89	1.0	
11. Var. Game	.00	-.27	.18	.97	-.63	.99	-.71	.98	.86	.99	1.0

^aThe sum of the following factors for the respective periods: Surgency, Elation, and Activation.

^bHeart-rate, period 1, etc.

^cVariance of heart-rate for period 1, etc.

Intercorrelations of Measures of Involvement
And Heart-Rate Data for Games 2 and 3

VARIABLE	1	2	3	4	5	6	7	8	9	10	11
1. S, E, A, P1 ^a	1.0										
2. S, E, A, P2	.26	1.0									
3. S, E, A, P3	.62	.61	1.0								
4. H. R. Per. 1 ^b	-.39	-.03	-.24	1.0							
5. Var. Per. 1 ^c	.04	.19	.36	.47	1.0						
6. H. R. P2	-.18	-.12	-.18	.95	.38	1.0					
7. Var. P2	-.10	-.04	.29	-.55	-.12	-.56	1.0				
8. H. R. P3	-.25	-.11	-.26	.98	.42	.99	-.63	1.0			
9. Var. P3	-.43	-.29	-.08	.27	.43	.24	.54	.21	1.0		
10. H. R. Game	-.26	-.10	-.22	.98	.41	.99	-.59	.99	.24	1.0	
11. Var. Game	-.43	-.26	-.04	.25	.43	.22	.67	.19	.99	.21	1.0

^aThe sum of the following factors for the respective periods: Surgency, Elation, and Activation.

^bHeart-rate, period 1, etc.

^cVariance of heart-rate for period 1, etc.

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ABSTRACT

This paper suggests that educators must move from controlling, custodial teaching methods to flexible, humanistic methods if they are to successfully meet the individual needs of today's youth. The counseling staff is suggested as a natural change agent team to facilitate and influence humanistic changes with teachers, as well as serving as initiators and supporters of alternate programs for young people. Some suggestions would have counselors: (1) serving as consultants to administrators; (2) urging administrators to provide paraprofessional help; (3) working in crisis intervention; and (4) providing assistance in supportive programs designed to improve a young person's skill in basic areas so that he can succeed in the school environment. The authors further suggest that counselors actively involve themselves in broad system programmatic changes which include providing homebound services for emotionally ill young people, staff in-service activities to encourage humanism, and communicating information through the media of the community, i.e., newspaper, radio, PTA, and other groups. Specific recommendations for how these ideas can be implemented are provided. (Author)

ED056345

CS 006 752

Dr. Jerome M. Rudnik

Mrs. Mary Anderson

Can administrator alone influence teachers' pupil control ideology?
How can counselors contribute in humanizing teachers' pupil control ideology?

Humanism: The Counselors' Role. As a Change Agent.

Student Unrest

A study by the National Association of Secondary School Principals.
Trump⁶ states that sixty per cent of high school principals report some form of active protest in their schools; and many who note no protest as yet, expect it in their schools in the near future. One of the key issues in such protest is student reactions to the feeling of being over-controlled and impotent in the face of bureaucratic processes of rules, customs, and procedures which govern their lives. They perceive this process and the personnel who administer it as restrictive and undemocratic. A school structure in which teachers and administrator become keepers of the law results in an image of the teachers as custodians rather than educators. This increases the students' resistance to them. Duggal² supports these contentions, i. e., student unrest was related to a custodial control ideology on the part of educators.

Humanistic Theories

Recent theories of leadership styles have modified classical organizational theories such as those expressed by Max Weber's "Bureaucratic Framework." Concepts of monarchical authority, impersonal social contact, and efficiency-centeredness have been altered by proposing integrating styles of management that reduce personal and institutional conflicts, Guba³; Likert⁴; Morphet, Johns and Roller⁵. Included in the integrative styles of management are team-centered and humanistic management concepts of administration and supervision.

In schools run in a humanistic orientation, it is proposed that teachers perceive that they are not overcontrolled by the administrator and can influence

the policies, programs, rules, customs, and procedures which govern their lives. Additional proposals suggest that teachers find greater security in a dynamic climate in which they share in the responsibility for decision-making. The administrator who demonstrates a warm, personal interest in the staff members provides a threat-free climate. Because of the humanistic orientation of the administrator, the school is conceived by the teachers as an educational community in which members learn through interaction and experience. On the other hand administrators holding a custodial orientation conceive of the school as an organization with rigidly maintained distinctions between the status of the administrators and the teachers. Both power and communication flow downward, and teachers are expected to accept the decisions of administrators. Administrators and teachers alike feel responsible for their actions only to the extent that orders are carried out to the letter.

Willower, et. al.⁷, have proposed a humanistic concept of teacher control ideology that should help resolve and integrate the conflict between the student, teacher, and the institution. The model of humanistic orientation in the school conceived of as an educational community in which members learn through interaction and experience. Students' learning and behavior are viewed in psychological and sociological terms rather than moralistic terms. The concepts for the resolution of conflict may be primarily punitive, utilizing devices such as coercion, ridicule, and the withholding of rewards which may be viewed as custodial theories; or they may be nonpunitive, based upon understanding, emphasizing appeal to the individual's sense of right and wrong and self-discipline rather than imposed discipline which may be viewed as humanistic theories. These approaches to teaching are similar to approaches to administration suggested by Guba, Likert, and also Morphet, Johns, and Reller. Willower believes that teachers who use humanistic pupil control concepts tend to reduce the conflict between the pupil, teacher, and the institution.

Willower, et. al.⁷ found that as teachers were absorbed into the teacher sub-culture, their pupil control ideology became more custodial, resulting in a process of socialization of teachers with regard to pupil control ideology.

It is believed that the most significant socialization of teachers takes place on the job, not in the teacher preparation program. The nature of the organization into which teachers are socialized will play a large role in determining the teachers' pupil control ideology.

Custodial Theories

Teachers who are weak in their control of pupils are viewed by administrators and colleagues as having marginal status. Teachers are expected to maintain adequate social distance between themselves and pupils, a normative requirement which obliges teachers to learn and to utilize a host of impersonal behaviors towards the pupils. Pupil control problems seem to play a major part in teacher-teacher, teacher-administrator, and teacher-pupil relationships in a custodial system.

In contrast to teachers who view students in a humanistic orientation, Willower, et. al.⁷, describes teachers who had custodial orientation as being primarily concerned with the maintenance of discipline and order. The theories that describe the custodial teacher are similar to theories that describe the custodial administrator.

Environmental Variables

A variety of outside forces are exerted upon the administrator and teacher which may have a positive relationship to the educator's adoption of a custodial ideology. Some differences are:

1. The outside forces exerted upon the administration by the state, community, board of education, union, peers and subordinates may be greater and more varied than those outside forces exerted upon the individual teacher in the classroom.
2. The threat that superiors pose upon participants may be greater upon the administrator than the teacher because the administrator does not have tenure in his position

while the teacher does enjoy the security of teaching tenure.

3. Discipline of students by teachers may be based upon the concept that it is in the best interest of the students, while the administrator may discipline students and teachers based upon the concept that it is in the best interest of the institution.
4. The individualized maturity growth that each student experiences and the different maturity levels of students may dictate the different degrees of custodialism or humanism a teacher can practice.

In a study by Budzik¹ he compared teachers' perceptions of their pupil control ideology by the amount of teaching experience. The data indicated a trend of lower mean score summaries as teachers gained experience in teaching. The data indicate that teachers tend to view themselves as more custodial in their pupil control ideology as they gain teaching experience.

It may be that the teacher may develop a complimentary, rather than a reciprocal role for himself, if the school administration does not provide properly trained counselors and other personnel to work with students that have deviant behavior problems. A teacher may be forced to adopt a custodial pupil control ideology to maintain reasonable control of his classes for the education process to continue. Because teachers perceive a lack of support from the administration to provide the aids necessary to support the teacher in the classroom and to aid the deviant student in his emotional problems, the teacher may be forced to adopt his own pupil control style.

It may be that environmental variables such as the type and nature of the subject matter being taught, number of students in the classroom, homogeneous or heterogeneous grouping of students, changes in school law, cultural and parental expectations of the community served by the school may influence teachers' perceptions of their pupil control ideology. Teachers may be so harrassed by what goes on in the class that the teacher is forced to adopt a custodial teaching style to carry on the educational process.

Students may be right about the fact that they are over controlled and are treated in a custodial manner. If student unrest is to be resolved administration, teachers and the community must develop alternative educational programs so that teachers can develop a humanistic teaching style.

Can a custodial school be humanized. Realistically, school will not simply change structure completely. It is up to us as educators, to innovate appropriate changes as we see the need.

In a study by Budzik¹ he attempted to determine if there was a significant relationship between the extent of custodial or humanistic based management style of public school principals, as perceived by teachers, and the extent to which teachers' ideology about students' control in class is custodial or humanistic based. The data indicated an inability to predict the dependent variable pupil control ideology based on the independent variable of teachers' perceptions of the administrator's control style. The negative Pearson "r" coefficients of correlation scores indicate hidden interactions or other variables that could be influencing both variables.

This finding indicates that administrators alone cannot influence teachers attitudes to a measurable extent toward a humanistic pupil control ideology. The administrator will need help from other staff members if he hopes to influence his teaching staff towards humanistic pupil control style.

The counseling staff, who are trained in humanistic techniques could contribute in many ways in influencing teachers towards a more humanistic pupil control style. They also would be the change agents in recommending alternative programs that would aid teachers in facilitating humanistic pupil control styles.

Suggestions

If a teacher's individual techniques of pupil control have failed, the counselor could provide aids to assist the teacher with deviant students. Counselors could recommend that school administrators need to provide a teacher-supervisor to advise teachers of alternative methods of dealing with deviant

students in humanistic ways.

The counselor could recommend and be involved in a supportive or helping program in which teacher could send students for short periods of time to receive individualized help in the subject matter. The program could provide a place for teachers to send students who may be disrupting the class to cool off and receive individualized counseling for short periods of time. The supportive teacher could provide alternative techniques and approaches to the teaching in meeting the needs of their problem students and students would have counselors available to aid in their problem.

In fact we see this supportive program as an alternative program to a basic education program that many schools have developed to serve students who are potential drop outs or are attendance problems. These classes many times turn out to be baby sitting jobs with high attendance problems with the stigma attached to the students as being hopeless and stupid. These students could be placed in the regular curriculum if the teachers could have available to them a supportive program to help handle and cope with the very difficult student. The stigma of the basic education as being a dumping place for hopeless students could then be eliminated.

The counseling staff could recommend to the administration that they should provide a crisis teacher whose role would be to observe disruptive students in the classroom and work with these students in his classroom until the students and teachers felt they could return to the normal classroom.

The counseling staff could recommend to the administration a half-way house to be developed for students who cannot function in the regular classroom. These students would attend the half-way house for a half day in a home learning environment for their basic subjects with special trained teachers in small student groups. These students could also be worked into the normal school program the other part of the half day.

The prejudice against differentiation between the physically ill and the emotionally ill in our schools need to be eliminated. Homebound pro-

grams need to be made available to those students that have emotional problems until they are able to return to school. The counseling staff could let this need be known to the administration, community and state board of education.

The counseling staff could plan and be involved in in-service programs with the teaching staff which would deal with humanistic pupil control styles. Because counselors deal with most of the students in school, they would identify those teachers who are perceived by students as custodial in their pupil control style. These selected teachers could then be involved in in-service training with the counseling staff. This could facilitate a change towards a more humanistic pupil control ideology by the custodial teachers.

Counseling staff needs to use a variety of techniques to make the teaching staff, administration, board of education, parents, community and State Board of Education aware of the needs of the school to serve students in a humanistic way. Some of the techniques which counselors could use to influence decision making groups in the schools, community, and state in meeting the needs of the schools could be innovative and others could be used that have been successful for many years by community pressure groups. Listed below are just a few of the techniques counselors could use to influence decision making groups to meet the needs of the school and community:

1. Recommendation in written form from the counseling staff to the administration and board of education.
2. Organizing a petition drive from the parents of the community to the local Board of Education or State Board of Education.
3. Community work shop programs (drugs, emotional development and illness, etc.).
4. Lecturing to different groups in the community on the needs of our school (P.T.A., clubs, Chamber of Commerce, etc.)
5. Designing radio programs, newspaper articles, letters to parents and the community emphasizing the needs of the students and school.

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There is a need to be made available to those students that have emotional problems and that they are able to return to school. The counseling staff could let this be known to the administration, community and state board of education.

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Counseling staff needs to use a variety of techniques to make the teaching staff, administration, board of education, parents, community and State Board of Education aware of the needs of the school to serve students in a humanistic way. Some of the techniques which counselors could use to influence decision making groups in the schools, community, and state in meeting the needs of the schools could be innovative and others could be used that have been successful for many years by community pressure groups. Listed below are just a few of the techniques counselors could use to influence decision making groups to meet the needs of the school and community:

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4. Lecturing to different groups in the community on the needs of our school (P.T.A., clubs, Chamber of Commerce, etc.)
5. Designing radio programs, newspaper articles, letters to parents and the community emphasizing the needs of the students and school.

These types of activities could provide the support and alternative programs teachers could have available to them to deal with deviant student behavior in the classroom.

Conclusion

Until the realities of individualized instruction can be accomplished in our school by providing smaller teacher ratios (15-1), making available paraprofessional, providing the necessary hardware for individual instruction, making available alternative programs with the deviant student, teachers will tend to develop custodial styles of dealing with students in the classroom. As a result, student unrest will continue to plague our schools unless administrators and counselors team together in providing programs to facilitate humanistic pupil control styles.

Administrators and counselors will need to use a variety of techniques to educate and sell humanistic programs to the community and state to serve students.

By providing alternative programs and methods of dealing with deviant students these activities could help prevent teachers from adopting a custodial pupil control ideology. These are positive links which administrators and counselors can use to help teachers overcome environmental variables which may force teachers to develop a humanistic pupil control ideology and also teach teachers to use humanistic pupil control styles.

This is one of the greatest challenges modern educators face today. If we fail, we will fail serving many of our youth who are our greatest natural resource. It is well worth every effort.

NOTES

1. Budzik, Jerome M., The Relationship Between Teachers' Ideology of Pupil Control and Their Perception of Administrative Control Style, doctoral dissertation, The University of Michigan, Ann Arbor, Michigan, 1971.
2. Duggal, Satya Pal, Relationships Between Student Unrest, Student Participation in School Management, and Dogmatism and Pupil Control Ideology of School Staff in the High School, doctoral dissertation, The University of Michigan, Ann Arbor, Michigan, 1969.
3. Guba, Egon, "Research in Internal Administration - What Do We Know?" in R. E. Campbell and M. Lipham Administrative Theory as a Guide to Action, Midwest Administration Center, The University of Chicago, 1965.
4. Likert, Rensis, The Human Organization: Its Management and Value, McGraw-Hill Book Company, Inc., New York, 1967.
5. Morphet, John L., et al., Educational Organization and Administration, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1967, pp. 104-114.
6. Trump, Lloyd J., et al., "The Nature and Extent of Student Activism," National Association of Secondary School Principals Bulletin, Volume 33, May, 1969, pp. 150-8.
7. Willower, Donald J., et al., The School and Pupil Control Ideology, The Administrative Committee on Research, Pennsylvania State University Studies, Number 24, University Park, Pennsylvania, 1967.

TABLE 5

Game Two - Heart-Rate Data

<u>Period 2</u>				<u>Intercorrelation Matrix</u>				
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>			
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
1	82.3	42	6.0	1	1.000	.095	-0.401	.304
2	59.3	42	32.3	2		1.000	.247	.181
3	87.1	42	22.3	3			1.000	-0.065
4	76.8	42	6.9	4				1.000

Graph 6 contains the continuation of those records in Graph 5. The variability of subjects two and three has again increased considerably. This may be related to the simple physical relationship between subjects during the study (i.e., subjects two and three were next to each other, subjects one and four were at opposite sides of the table.) Table 6 verifies these relationships and also provides a graphic example of the low variance of subjects one and four versus the high variance of subjects two and three.

TABLE 6

Game Two - Heart-Rate Data

<u>Period 3</u>				<u>Intercorrelation Matrix</u>				
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>			
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
1	80.7	41	5.3	1	1.000	-0.141	.175	-0.167
2	57.8	41	75.6	2		1.000	.057	.312
3	85.8	41	526.9	3			1.000	-0.094
4	75.2	41	5.8	4				1.000

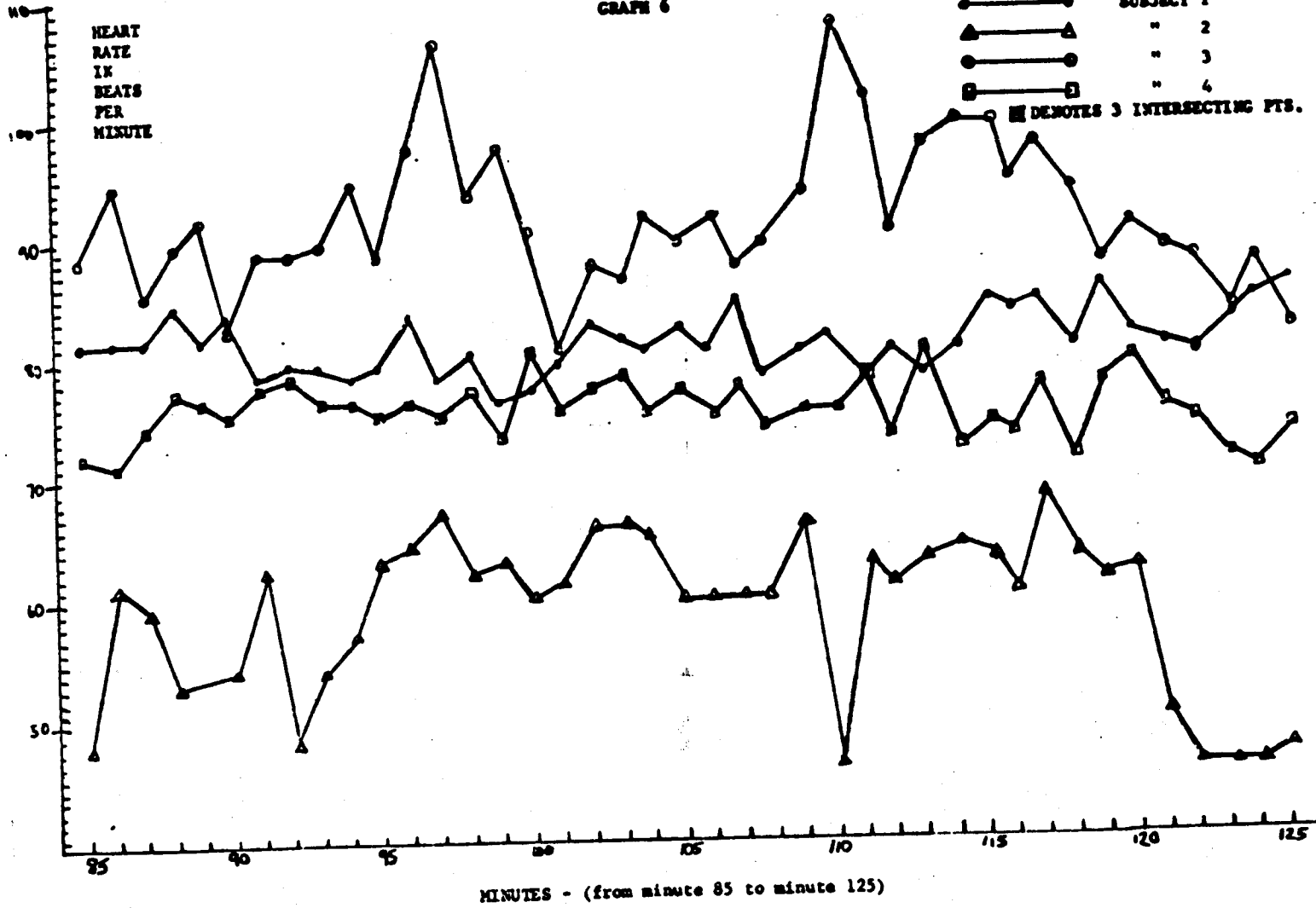
GRAPH 6

GAME 2, PERIOD 3
85 - 125 MINUTES

—●—	SUBJECT 1
—▲—	" 2
—●—	" 3
—□—	" 4

■ DENOTES 3 INTERSECTING PTS.

HEART
RATE
IN
BEATS
PER
MINUTE

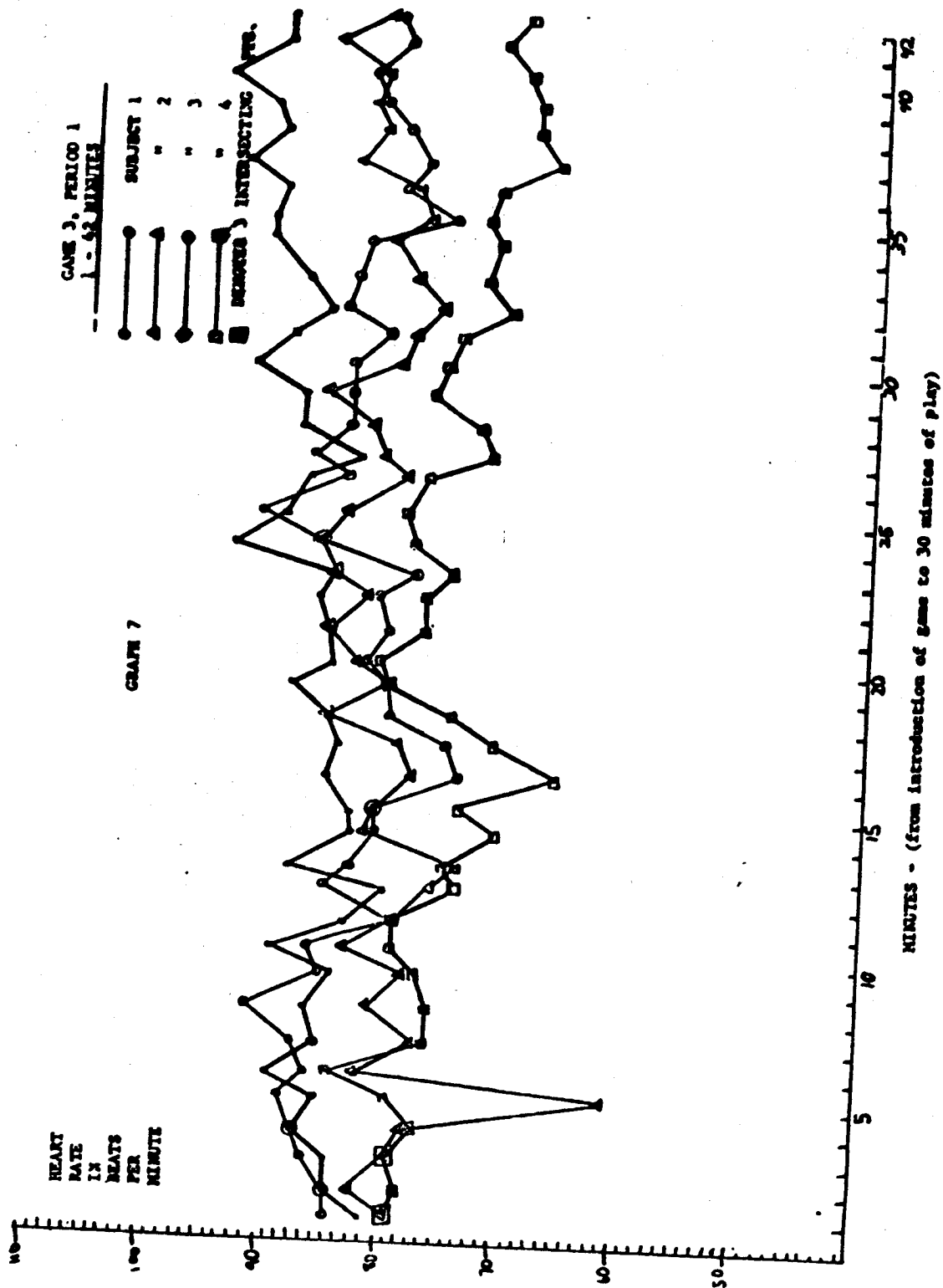


Graph 7 contains the heart-rate data for game three, period one, for four subjects. If compared to games one and two, the patterns found in Graph 7 are quite dissimilar. Usually, the variability is lower at this point in the game. Table 7 contains the descriptive statistics for period one, game one. Subjects one and two are following each other somewhat. Subjects three and four are reacting to the game environment

TABLE 7

<u>Game Three - Heart-Rate Data</u>					<u>Intercorrelation Matrix</u>			
<u>Period 1</u>					<u>Subject</u>			
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1	87.1	42	11.7	1	1.000	.275	-0.054	-0.268
2	80.4	42	17.7	2		1.000	-0.179	-0.074
3	82.8	42	14.4	3			1.000	.490
4	74.9	42	15.6	4				1.000

quite regularly ($r_{3,4} = 0.490$). There is very little lag between the fluctuations of subjects three and four. In fact, Graph 7 seems to indicate an oscillatory effect with first one subject leading the other for a few minutes, then the leader becoming the follower. In addition, Graph 7 provides information beyond the correlation coefficient which does not take into consideration auto-correlation (i.e. the effect of lagged relationships). When one compares subject two with four on Graph 7, even though the instantaneous correlation is low ($r_{2,3} = -.179$), the relationship seems quite strong if the data on subject four is lagged about one minute at selected points in the period.



Graph 8 represents a continuation of Graph 7 for period two of game three. In this game, as opposed to games one and two, the variability in heart-rate decreased. Table 8 contains the statistics associated with the data in Graph 8. The strongest relationship is between subjects

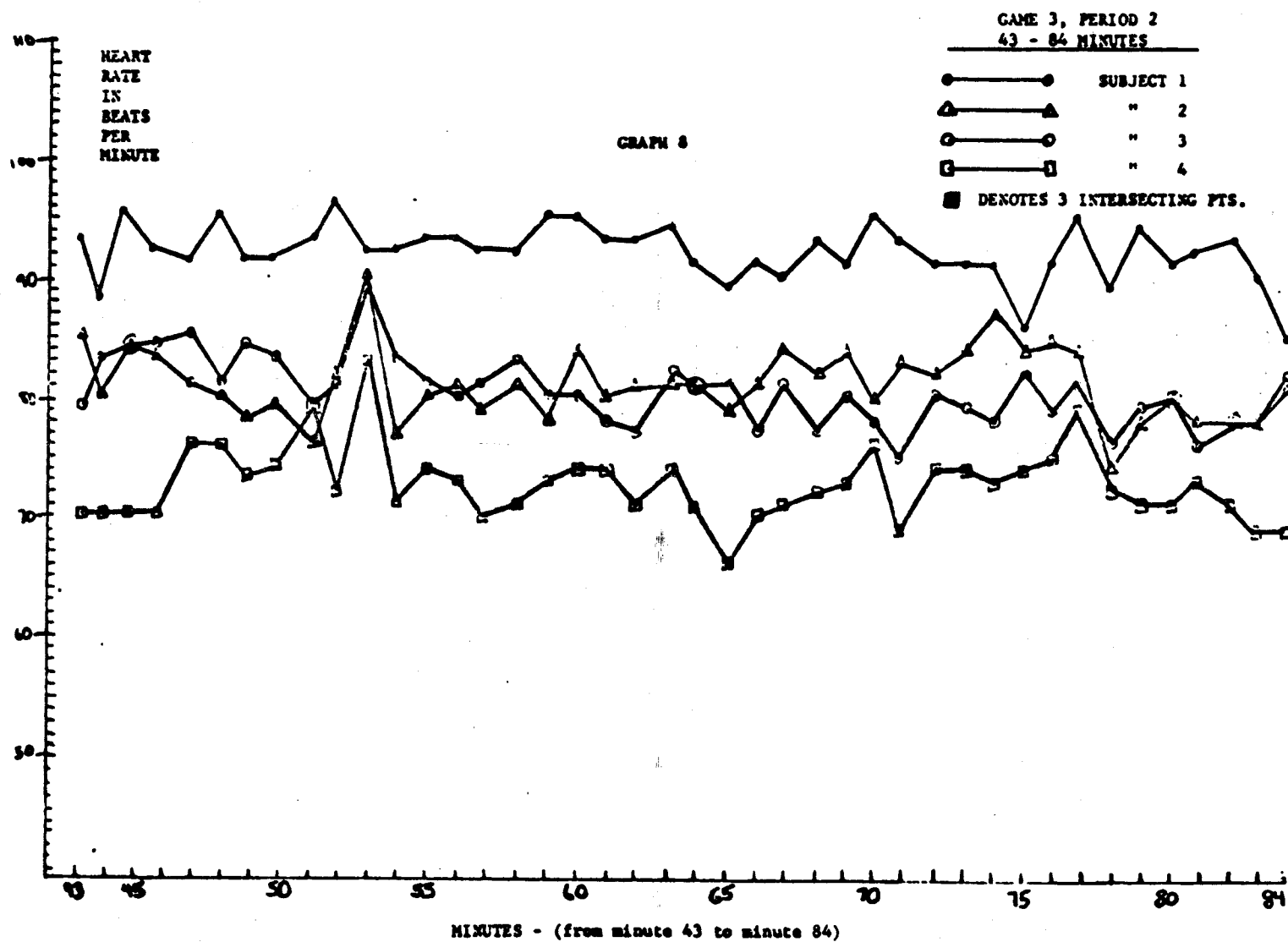
TABLE 8

Game Three - Heart-Rate Data

<u>Period 2</u>				<u>Intercorrelation Matrix</u>				
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>			
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
1	91.9	42	5.5	1	1.000	.033	-0.131	.346
2	80.9	42	7.4	2		1.000	.088	.048
3	80.1	42	5.8	3			1.000	.035
4	72.4	42	6.9	4				1.000

one and four. Again, the correlations among the other subjects are instantaneous and do not reflect true relationships within isolated time blocks. This is clearly illustrated on Graph 8 between minutes fifty and sixty. Within this ten minute interval, subjects two, three, and four are behaving in similar fashion.

Graph 9 completes the data records for the subjects in game three. Table 9 contains the associated statistics for period three, game three. This graph provided information on subjects two and three who had the closest relationship during one period of all games. Their heart-rate correlated 0.594 over a forty-one minute interval. The relationships of

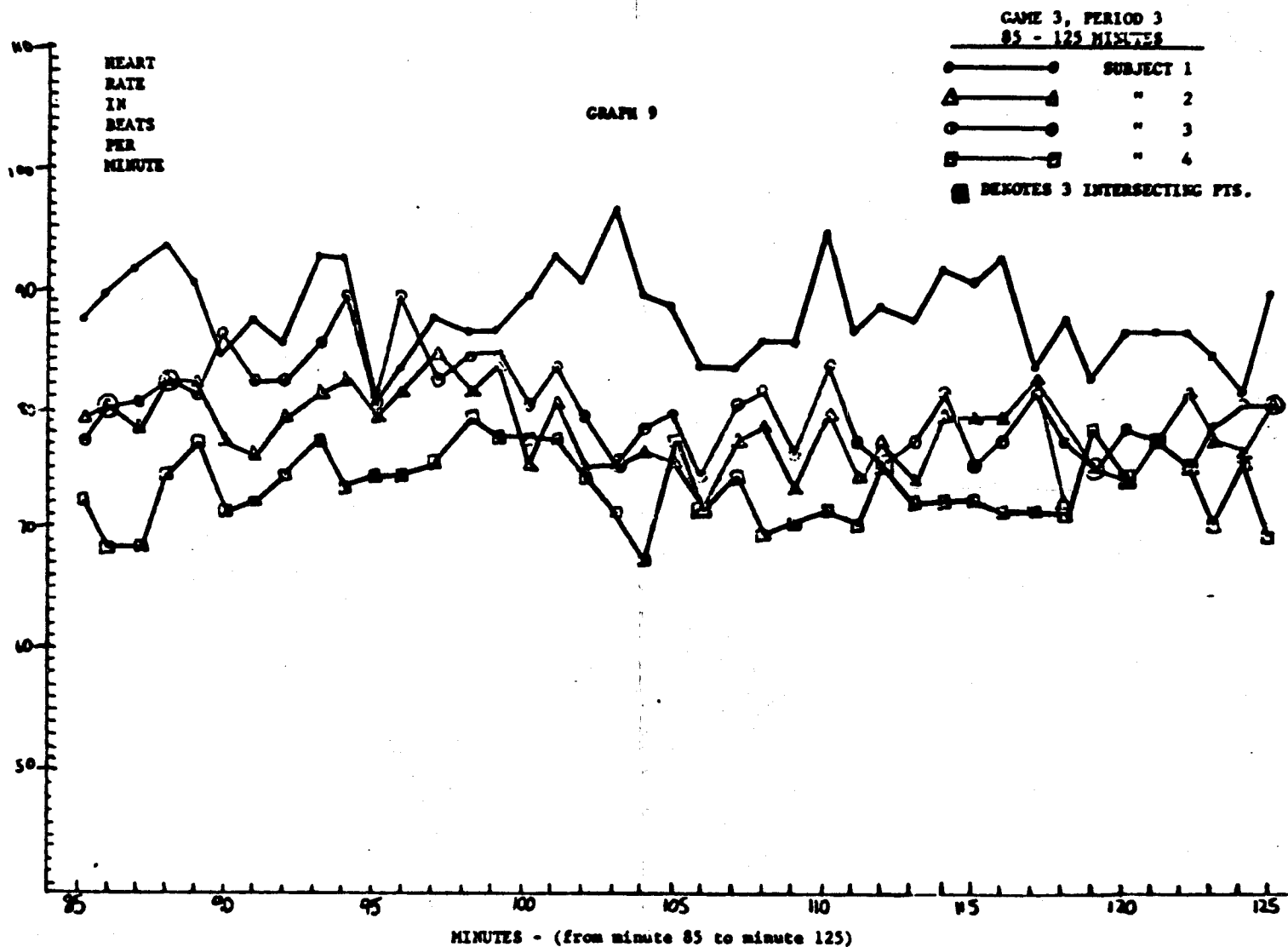


subject two with subjects one and four were also of interest. The variability for game three, period three was much lower than for the same period in games one and two (see Appendix C for total game data).

TABLE 9

Game Three - Heart-Rate Data

<u>Period 3</u>				<u>Intercorrelation Matrix</u>					
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1	87.4	41	13.6	1	1.000		.205	.080	-0.105
2	77.9	41	10.0	2			1.000	.594	.241
3	79.8	41	13.4	3				1.000	.193
4	73.0	41	9.3	4					1.000

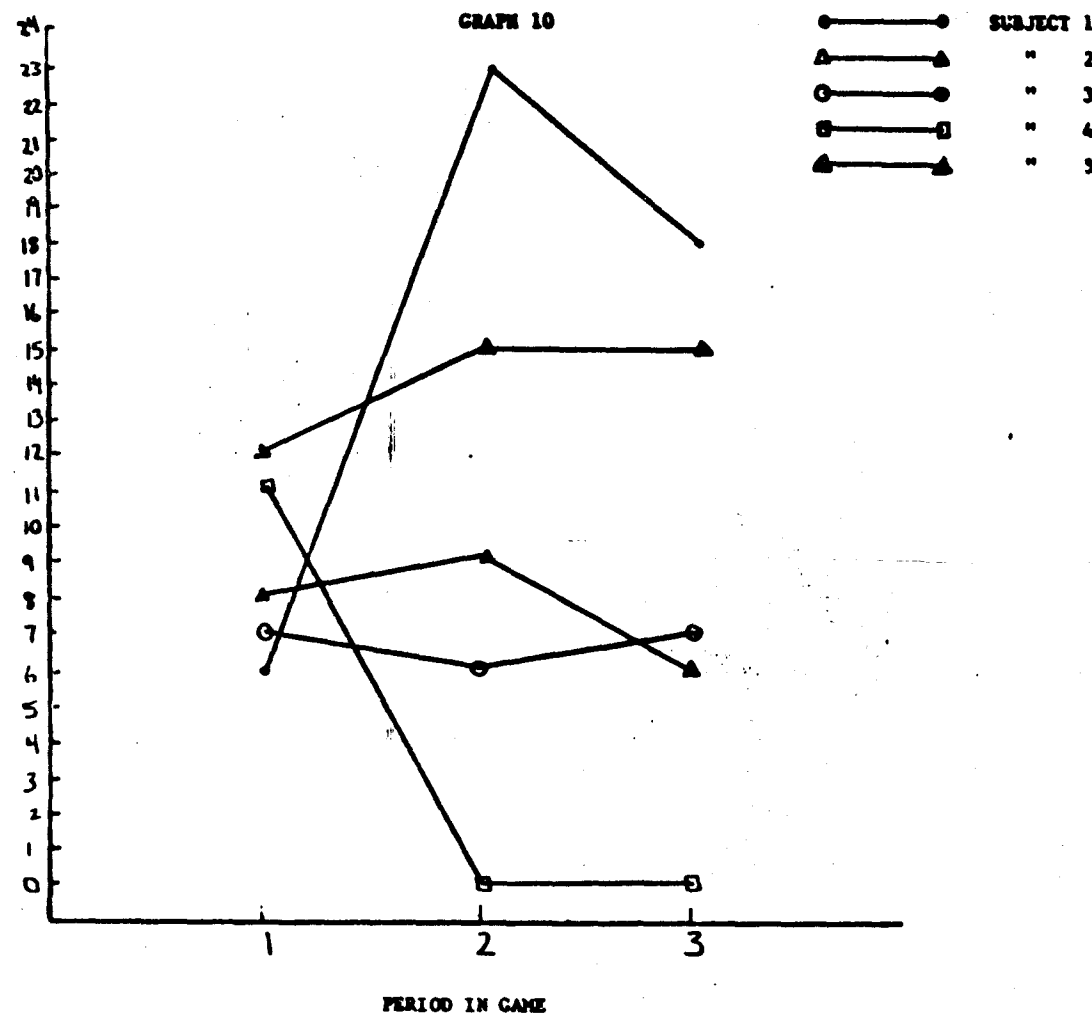


Mood Indicators

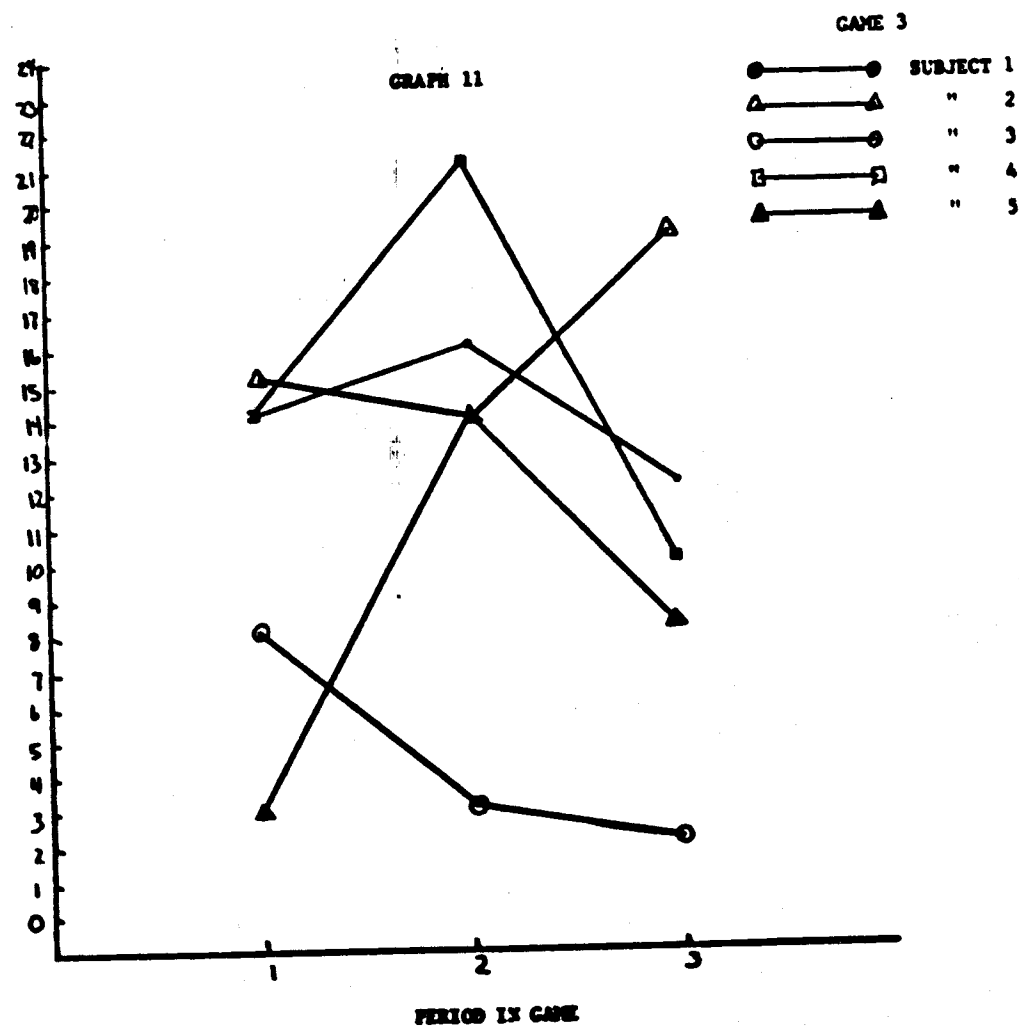
As noted above, the measures of involvement in the game were the Mood Adjective Check List (MACL) and a Modified (Mood) Check List (MCL). Both instruments were based on the work of Nowlis (1970). Appendix B contains both checklists. The MACL was completed by each subject near the end of the game introduction, approximately half-way through the game, and at the end of the game. The MCL was recorded by the game leader on each subject at similar times. Little additional information was gained from the overt measures of arousal. However, the self-report check list did provide some relevant data on several subjects.

Of primary interest was the involvement experienced by each participant in games two and three. Thus, the factor scores on the following factors were summed for periods 1, 2, and 3 in order to provide a more stable measure of involvement: (1) Surgency; (2) Elation; (3) Activation. The MACL and MCL factor scores plus the sum of the above factor scores for each subject by period by game are provided in Appendix C, Item II. Graph 10 contains the sum of the three factor scores noted above for periods 1, 2, and 3 for all subjects in game two. This sum represents a general measure of involvement in the game. Theoretically, one would have expected an inverted U-shaped graph representing an increase in arousal until the middle of the game followed by a decrease. This hypothesis is supported somewhat by subjects one, two, and five. The reaction of subject four was unexpected. The latter subject seems to have been "turned off" by the game as it progressed.

GENERAL
AROUSAL
(Sum of MACI factor
scores for SURGENCY,
ELATION, ACTIVATION)



GENERAL
ARC'SAL
(Sum of MACL factor
scores for SURGENCY,
ELATION, ACTIVATION)



Graph 11 contains the sum of the factor scores reflecting involvement in game three for all subjects. Again, as in game two, the expected pattern was obtained from three of the five subjects. Subject five has a striking increase in involvement from period one to period two. The increase in involvement as reported by these subjects was also noted in several heart-rate changes from period one to two; variability of heart-rates tending to increase as the game progressed.

Attitude Change Scores

Appendix A contains the attitude questionnaire that all game participants completed before and after the game. Of primary interest was the affective component of these attitudes as measured by the evaluative bipolar adjectives on selected concepts. Thus, Table 10 contains the average change score within games for the selected concepts. Appendix C contains all data on all subjects for each game on these attitude change measures. The grand mean for each concept represents overall increases or decreases in affect associated with each concept (i.e. negative and positive changes are included in the grand mean for the attitude change score). The results indicate that the game participants believed that it was better to be honest and law-abiding after the game experience. However, the game did not affect their feelings about being a hard worker or being irresponsible and immoral. The relationship between these attitude change scores and the affective arousal experienced in the game is dealt with in the next section.

TABLE 10

Average Attitude Change Scores by GameConcept

Being honest is:

<u>Game</u>	<u>Pre Game^a</u>	<u>Post Game</u>	<u>Change^b</u>
1	4.80	13.20	8.40
2	4.20	6.80	2.60
3	4.20	8.60	4.40
GM (Grand Mean)	4.40	9.53	5.13

Being a hard worker is:

1	5.20	7.80	2.60
2	4.80	6.20	1.40
3	6.60	6.80	0.20
GM	5.53	6.93	1.40

Being irresponsible is:

1	20.20	16.40	-1.80
2	19.60	16.20	3.80
3	17.20	16.26	-1.00
GM	19.00	16.26	0.33

Being immoral is:

1	17.80	16.60	-1.20
2	16.40	16.60	0.20
3	13.60	14.40	0.80
GM	15.93	15.87	-0.20

Being law-abiding is:

1	6.54	11.20	5.80
2	6.56	6.80	1.20
3	7.60	10.80	3.20
GM	6.20	9.60	3.40

^aLow values reflect positive affect; high values reflect negative affect.

^bThis change score is based on the relative differences between pre-post scores, and not absolute differences. Thus, the pre-post difference in some cases is not exactly equal to the mean change score.

Correlation Among Involvement and Attitude Change Scores

Table 11 contains the inter-correlations among the affective components of the attitude change scores and the measures of heart-rate and variance in heart-rate for Game 1. Little weight can be given to Table 11 (also 12 and 13 which contain the same content) primarily because the intercorrelations are based on three (or four, see above) subjects. Nevertheless, if the directionality (sign) of the relationships across periods is consistent then some validity for the relationships may be assumed. This directional hypothesis is confirmed in Table 11 for the subjects' change in attitude on "Honesty." Interestingly, the heart-rate and not its variance is most highly correlated with this attitude change score. Thus, those individuals with low heart-rates and low variance during game one changed very little on this concept. The relationship between heart-rate and the change in attitude on the concept "hardworking" was opposite to the relationship for the concept of honesty. Thus, the change in attitude was relatively higher for those individuals with lower heart-rate variability.

Patterns quite similar to that for the concept of "hard working" occurred for "irresponsible" and "law abiding." The pattern for "honesty" was repeated by the pattern for "immoral."

Table 12 contains the intercorrelations among attitude change and heart-rate data for Game 2. The individuality of game experiences is clarified when the variance for game one and variance for game two rows are inspected. Each game has affected the participants uniquely on the "hard working" and "irresponsible" variables. The other attitude variables are in the same direction on both games.

TABLE 11

Intercorrelation of Heart-Rate Data and Change in Affect
Associated with the Concepts of Honesty, Hard Work, Irre-
sponsibility, Immorality, and Law Abidement.

Game 1

Variable	1	2	3	4	5
1. Honesty ^a	1.0				
2. Hard Working	.15	1.0			
3. Irresponsible	.50	.93	1.0		
4. Immoral	.61	-.69	-.38	1.0	
5. Law Abiding	.12	.99	.92	-.71	1.0
6. H. R. Per. 1 ^b	.89	-.31	.05	.90	-.34
7. Var. Per. 1 ^c	.26	-.92	-.71	.92	.93
8. H. R. Per. 2	.99	-.16	.52	.60	.14
9. Var. Per. 2	.59	-.71	-.40	.99	-.72
10. H. R. Per. 3	.97	.38	.70	.40	.36
11. Var. Per. 3	.61	-.69	-.38	1.0	-.71
12. H. R. Game	1.0	.15	.50	.60	.12
13. Var. Game	.54	-.75	-.45	.99	-.76

^aBased on change in affect associated with each of the first five variables.

^bHeart-rate, Period 1, etc.

^cVariance of heart-rate, Period 1, etc.

TABLE 12

Intercorrelation of Heart Rate Data and Change In Affect
Associated with the Concepts of Honesty, Hard Work, Irre-
sponsibility, Immorality, and Law Abidement.

Variable	Game 2				
	1	2	3	4	5
1. Honesty ^a	1.0				
2. Hard Working	.02	1.0			
3. Irresponsible	.20	9.0	1.0		
4. Immoral	.84	.22	.17	1.0	
5. Law Abiding	.26	.12	-.19	.72	1.0
6. H. R. Per. 1 ^b	-.58	.44	.54	-.74	-.75
7. Var. Per. 2 ^c	.16	.49	.79	-.19	-.72
8. H. R. Per. 2	-.59	.61	.63	-.62	-.57
9. Var. Per. 2	.99	-.66	.16	.78	.17
10. H. R. Per. 3	-.63	.56	.58	-.67	-.60
11. Var. Per. 3	.42	.73	.94	.23	-.32
12. H. R. Game	-.61	.55	.59	-.68	-.63
13. Var. Game	.46	.70	.92	.25	-.34

^aBased on change in affect associated with each of the first five variables.

^bHeart-rate, Period 1, etc.

^cVariance of heart-rate, Period 1, etc.

Table 13 contains the intercorrelations for heart-rate and attitude scores for game three. When compared with the data for game one in Table 11, the directionality was reversed on three variables: (1) Honesty; (2) Hard Working; (3) Immoral.

TABLE 13
Intercorrelation of Heart-Rate Data and Change in Affect Associated with the Concepts of Honesty, Hard Work, and Irresponsibility, Immorality, and Law Abidement.

Game 3

Variable	1	2	3	4	5
1. Honesty ^a	1.0				
2. Hard Working	-.22	1.0			
3. Irresponsible	.69	-.76	1.0		
4. Immoral	.83	-.08	.71	1.0	
5. Law Abiding	.94	-.46	.88	.88	1.0
6. H. R. Per. 1 ^b	-.65	.79	-.70	-.27	-.70
7. Var. Per. 1 ^c	7.2	-.60	.10	-.44	.42
8. H. R. Per. 2	-.80	.55	-.60	-.38	-.76
9. Var. Per. 2	.16	-.89	.48	.20	.78
10. H. R. Per. 3	-.69	.67	-.60	-.25	-.68
11. Var. Per. 3	-.39	.87	-.59	.00	-.47
12. H. R. Game	-.76	.65	-.65	-.34	-.74
13. Var. Game	-.80	.63	-.68	-.42	-.79

^aBased on change in affect associated with each of first five variables.

^bHeart-rate, Period 1, etc.

^cVariance of heart-rate, Period 1, etc.

Table 14 provides a summary of the attitude change measures and the heart-rate data across games 1, 2, and 3. Several correlations are quite high based on eleven subjects. It was originally hypothesized that changes in attitude would be related to the general involvement of a participant in a game as measured by his heart-rate. It was also expected that the variance in heart-rate would be a better predictor of attitude change than the average heart-rate. This hypothesis gains support when one compares the r 's in row 12 of Table 14 with the r 's in row 13.

TABLE 14

Intercorrelation of Heart-Rate Data and Change in Affect Associated with the Concepts of Honesty, Hard Work, Irresponsibility, Immorality, and Law Abidement.

Games 1, 2, 3

Variable	1	2	3	4	5
1. Honesty ^a	1.0				
2. Hard Working	.40	1.0			
3. Irresponsible	.57	.64	1.0		
4. Immoral	.27	-.48	.07	1.0	
5. Law Abiding	.49	.51	.81	.35	1.0
6. H. R. Per. 1 ^b	.01	.44	.16	-.23	-.26
7. Var. Per. 1 ^c	.19	-.23	-.29	.10	-.56
8. H. R. Per. 2	-.15	.48	.18	-.19	-.22
9. Var. Per. 2	.56	-.11	-.94	-.57	-.35
10. H. R. Per. 3	-.14	.48	.22	-.11	-.15
11. Var. Per. 3	.11	.44	.41	-.80	-.35
12. H. R. Game	-.10	.48	.19	-.20	-.21
13. Var. Game	.31	-.16	.31	-.99	-.44

Footnotes on page 37

Except for the concept of "hard working" the r 's based on heart-rate variance are larger. For the concepts "immoral" and "law-abiding" high variability in heart-rate is associated with less attitude change. There is a positive relationship between heart-rate variability and change in attitude for "honesty" and "irresponsible." Thus, one might conclude that fluctuations in heart-rate as a measure of the affective impact of a game on participants can be related to attitude change.

In an attempt to increase the validity of the assumption of a relationship between involvement and attitude change, Tables 15, 17, and 19 contain intercorrelation matrices for the sum of the surgency, elation, and activation factor scores (for periods 1, 2, 3) versus the attitude change scores. Tables 16, 18, and 20 contain the respective means and standard deviations for these tables.

The most consistent pattern of relationships in Tables 15, 17, and 19 is on the concept of "being a hard worker is". It is a negative relationship in all games thus supporting itself logically (i.e. if you are working hard playing your role in the game your attitude about the importance of hard work will not change). At the beginning of the game the participants "valued" hard work and at the end of the game they remained consistent in their feelings toward hard work (see Appendix C, Item III).

The unique characteristics of individual games are revealed in Table 19, where games 2 and 3 are combined. The relationships among variables not directly related to the game (opposite hard working) deteriorate

when unique games are combined. The game-specific phenomena are lost in an across-game analysis. In addition, the inconsistencies in Tables 15 and 16 lead one to conclude that greater control must be exercised in future research with simulation games when the hypotheses of interest are closely related to the very nature of the process involved.

TABLE 15
Intercorrelations of Attitude Change Scores
With Measures of Game Involvement
For Game 2

Variable	1	2	3	4	5	6	7	8
1. Honesty ^a	1.0							
2. Hard Working	.02	1.0						
3. Irresponsible	.21	.91	1.0					
4. Immoral	.84	.22	.18	1.0				
5. Law Abiding	.26	.12	-.19	.72	1.0			
6. Σ S, E, A, Per. 1 ^b	.49	-.15	-.36	.81	.93	1.0		
7. Σ S, E, A, Per. 2	-.05	-.82	-.54	.36	-.66	-.38	1.0	
8. Σ S, E, A, Per. 3	.76	-.55	-.24	-.50	-.18	.18	.61	1.0

^aBased on change in affect associated with each of the first five variables.

^bThe sum of the following factors for the respective periods: urgency, elation, activation.

TABLE 16
Game 2 - Heart-Rate Data and Attitude Change Scores

Variable	Mean ^a	S.D. ^b
1. Honesty ^c	2.8	2.75
2. Hard Working	1.2	1.50
3. Irresponsible	1.2	1.89
4. Immoral	1.8	1.25
5. Law Abiding	2.0	1.82
6. Σ S, E, A, Per. 1 ^d	9.0	2.74
7. Σ S, E, A, Per. 2	10.8	9.70
8. Σ S, E, A, Per. 3	7.2	6.13

^aN = 4

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dThe sum of the following factors for the respective periods: urgency, elation, activation.

TABLE 17
Intercorrelations of Attitude Change Scores
With Measures of Game Involvement
For Game 3

Variable	1	2	3	4	5	6	7	8
1. Honesty ^a	1.0							
2. Hard Working	-.22	1.0						
3. Irresponsible	.67	-.76	1.0					
4. Immoral	.83	-.09	.71	1.0				
5. Law Abiding	.94	-.46	.88	.88	1.0			
6. Σ S, E, A, Per. 1 ^b	-.44	-.76	.33	-.35	-.14	1.0		
7. Σ S, E, A, Per. 2	.00	-.19	.74	.15	.33	.87	1.0	
8. Σ S, E, A, Per. 3	-.66	-.57	-.05	-.71	-.46	.90	.59	1.0

^aBased on change in affect associated with each of the first five variables.

^bThe sum of the following factors for the respective periods: sur-
gency, elation, activation.

TABLE 18
Game 3 - Heart-Rate Data and Attitude Change Scores

Variable	Mean ^a	S.D. ^b
1. Honesty ^c	5.0	3.55
2. Hard Working	2.5	1.29
3. Irresponsible	2.5	2.38
4. Immoral	4.0	2.94
5. Law Abiding	3.8	2.09
6. Σ S, E, A, Per. 1 ^d	12.8	3.20
7. Σ S, E, A, Per. 2	13.5	7.59
8. Σ S, E, A, Per. 3	10.8	6.99

^aN = 4

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dThe sum of the following factors for the respective periods: sur-
gency, elation, activation.

TABLE 19
Intercorrelations of Attitude Change Scores
With Measures of Game Involvement
For Games 2 and 3

Variable	1	2	3	4	5	6	7	8
1. Honesty ^a	1.0							
2. Hard Working	.09	1.0						
3. Irresponsible	.55	.18	1.0					
4. Immoral	.83	.24	.62	1.0				
5. Law Abiding	.76	.00	.59	.86	1.0			
6. Σ S, E, A, Per. 1 ^b	.18	-.06	.21	.27	.39	1.0		
7. Σ S, E, A, Per. 2	.04	-.66	.14	.03	-.01	.26	1.0	
8. Σ S, E, A, Per. 3	.04	-.34	-.02	-.18	-.21	.62	.61	1.0

^aBased on change in affect associated with each of the first five variables.

^bThe sum of the following factors for the respective periods: sur-
gency, elation, activation.

TABLE 20
Games 2-3 - Heart-Rate Data and Attitude Change Scores

Variable	Mean ^a	S.D. ^b
1. Honesty ^c	3.9	3.18
2. Hard Working	1.9	1.45
3. Irresponsible	1.9	2.10
4. Immoral	2.9	2.41
5. Law Abiding	2.9	2.53
6. Σ S, E, A, Per. 1 ^d	10.9	3.48
7. Σ S, E, A, Per. 2	12.1	8.20
8. Σ S, E, A, Per. 3	9.0	6.36

^aN = 4

^bStandard Deviation

^cBased on change in affect associated with each of the first five variables.

^dThe sum of the following factors for the respective periods: sur-
gency, elation, activation.

DISCUSSION

The present study was purely exploratory and as such should be interpreted with due caution. The findings suggest that gross measures of arousal or involvement in simulation games are related to attitude change but that the complexity of the relationship calls for more controlled experimentation. The findings also support the notion of a "spread of affect" during game sessions where fluctuations in individual heart-rates followed each other several times throughout the game sessions. This finding in itself should be of interest to people studying small group processes because it provides a covert indicator of the emotional reaction of several subjects within identical environments.

Research and theory in attitude and attitude change has risen sharply lately [see Beliefs, Attitudes, and Values by Rokeach (1970); Attitude Change by Kiesler, Collins, and Miller (1969); Psychological Foundations of Attitudes by Greenwald, Brock, and Ostrom (1968)].

Rokeach (1971) notes that ". . . the main theoretical focus of contemporary social psychology is on the concept of attitude and on theories of attitude change." He also notes that a necessary prerequisite for attitude change is a state of inconsistency. In addition, a state of inconsistency can be created in an individual by two methods:

- (1) to induce a person to engage in behavior that is incompatible with his attitudes and values,
- or
- (2) expose him to information about the attitudes or values of significant others that are incompatible with his own attitudes and values.

The experience of an individual in a simulation designed to expose players to what it really is like in inner-cities, namely the game of Ghetto (1970), fulfills the above experimental situations required for attitude change under two conditions: (1) when the player's attitudes and values are not compatible with his experience in the simulation; (2) when the player believes that the information he receives during the simulation was developed by known authorities in the field. These two approaches are the classical ways of inducing attitude change. Changes in attitudes from playing simulation games may be interpreted within this theoretical framework. It should be added that the approach requires no assumption as to the affective impact of the simulation experience on the participants. In fact, attitudes and values in Rokeach's scheme are cognitions that are related to the "self." The affective aspect of Rokeach's theory lies in the satisfaction or dissatisfaction the "self" experiences in a particular situation. For example: $X = \text{self}$; $Y = \text{one's perceived performance or behavior in whatever the situation}$. " X and Y are dissonant with one another if the person's behavior in any given situation leads him to become dissatisfied with himself; X and Y are consonant if his behavior in a given situation leads him to remain satisfied with himself." Thus, the cognitive aspects of attitudes are intimately related to a person's feelings (affective component) about himself in particular situations. The complexity of a simulation game is brought to light when the role playing aspects are noted. For instance, how would Rokeach handle the problem of "self" when the individual technically becomes another "self" in a role-playing environment?

Greenwald (1969, 1970) may provide a partial answer to the latter question. As noted previously, Greenwald (1970) believes that "... attitude change through role playing may depend on the role player's having an opportunity to consider counterattitudinal information that he has not previously rejected." McLaughlin (1971) noted that "... Greenwald concluded that it is not so much learning the contents of the communication that affects subsequent attitude change as the learning of self-generated cognitive reactions. The effectiveness of the communication appears to be significantly related to the retention of issue-related cognitions not contained in the communication itself but aroused and rehearsed by the recipient at the time of the communication." Thus, arousal and satisfaction with one's experiences are related to modifications in cognitions and attitudes as suggested above by Rokeach (1971) and Greenwald (1970). The present study represents a preliminary attempt to relate the affective aspects of particular experiences directly to attitude change thereof. Due to the complexity of relating process variables with produced changes, further controlled experimentation in line with the present study is required. Future research along these lines may provide guidelines for the optimal use of social simulation games in the classroom.

FOOTNOTES

¹The simulation game (Ghetto, 1970) employed in the present study was developed by Dove Toll with the Academic Games Program, The Johns Hopkins University. It is one of several social simulation games developed by the Hopkins group. They are games " . . . in which certain social processes are explicitly mirrored in the structure and functioning of the game. The game is a kind of abstraction of these social processes, making explicit certain of them that are ordinarily implicit in our everyday behavior. A social simulation game always consists of a player or players acting in a social environment. There are two ways in which the social environment is incorporated into a game's structure: (1) each player can act as a portion of the social environment of each other player; (2) the rules of the game may contain contingent responses of the environment." (From Coleman, 1968.)

For further information and research on simulation games, see Coleman, 1961, 1962, 1966, 1967a, 1967b, 1967c, 1968; Boocock, 1966, 1967, 1968, and forthcoming; Gamson, 1969; Guetzkow, 1962; Inbar, 1969, 1970a, 1970b, and, in press; Livingston, 1970a, 1970b, and in press; Nesbitt, 1968; Raser, 1969; Stoll, 1969a, 1969b, 1970, and in press; Abelson, 1969.

²The situational and dispositional conditions determining this cognitive activity are nearly synonymous with an individual's performance in a simulated environment. The major asset of using a simulated environment for psychosocial or psychobiological research is the control one has over both of the determining conditions put forth by Lazarus, Averill, and Opton (in Arnold, 1970). Dispositional conditions can be controlled experimentally by selecting subjects with similar or dissimilar psychophysiological characteristics depending on the effect desired. Situational conditions can be effected by simple modifications of the structural properties of the simulated environment under study.

³Mood was assessed with the Mood Adjective Checklist (MACL) developed by Nowlis (in Arnold, 1970).

References

- Abelson, Robert P. "Simulation of Social Behavior." In Handbook of Social Psychology. Cambridge, Mass: Addison-Wesley, 1969.
- Anderson, L. R., and Fishbein, M. "Prediction of Attitude from the Number, Strength, and Evaluative Aspects of Beliefs about the Attitude Object: A Comparison of Summation and Congruity Theories," In M. Fishbein, Readings in Attitude Theory and Measurement. John Wiley and Sons, New York, 1967, pp.437-443.
- Antrobus, J. S. (Ed.) Cognition and Affect. Boston: Little, Brown and Company, 1970.
- Arnold, M. (Ed.) Feelings and Emotions. New York: Academic Press, 1970.
- Black, P. (Ed.) Physiological Correlates of Emotion. New York: Academic Press, 1970.
- Boocock, Sarane S. and Coleman, James S. "Games with Simulated Environments in Learning." Sociology of Education. Summer, 1966.
- Boocock, Sarane S. Schild, E. O. and Stoll, Clarice S. "Simulation Games and Control Beliefs." The Center for Social Organization of Schools Report No. 10, The Johns Hopkins University. November, 1967.
- Boocock, Sarane S. and Schild, E. O. (eds.) Simulation Games in Learning. Beverly Hills, Calif: Sage, 1968.
- Boocock, Sarane S. "Instructional Games." Encyclopedia of Education. New York: Macmillan Company, forthcoming.
- Coleman, James S. The Adolescent Society. New York: Free Press, 1961. Chapter XI.
- Coleman, James S. "Analysis of Social Structures and Simulation of Social Processes with Electronic Computers." In Guetzkow, Harold S. (ed.) Simulation in Social Science. Englewood Cliffs, New Jersey: Prentice-Hall, 1962, pp. 61-67.
- Coleman, James S. et al. (eds.) Simulation Games and Learning Behavior, Parts I and II, special issues of American Behavioral Scientist, Volume 10, October and November, 1966.
- Coleman, James S. "Learning through Games." National Education Association Journal 56 (1) January, 1967, pp.69-70.

- Coleman, James S. "Game Models of Economic and Political Systems." Pp. 30-44 in The Study of Total Societies. Samuel Z. Klausner (ed.) New York: Anchor Books, 1967 b.
- Coleman, James S. "Games--New Tools for Learning." Scholastic Teacher 15 (8), November, 1967 c.
- Coleman, James S. "Simulation Games and Social Theory." American Behavioral Scientist 12 (July-August), 1968, pp.2-6.
- Coleman, James S. "Social Processes and Social Simulation Games" in Simulation Games in Learning, edited by Sarane S. Boocock and E. O. Schild, 1968, Sage Publications, Inc., Beverly Hills, Calif.
- Ewert, O. "The Attitudinal Character of Emotion" in Feelings and Emotions by Magda Arnold, pp. 233-240. New York: Academic Press, 1970.
- Fishbein, M. (Ed.) Readings in Attitude Theory and Measurement. New York: John Wiley & Sons, Inc., 1967.
- Fishbein, M. and B. H. Raven. "The AB Scales: An Operational Definition of Belief and Attitude" in Readings in Attitude Theory and Measurement by Martin Fishbein, pp. 183-189. New York: John Wiley & Sons, 1967.
- Gamson, W. A. Simsoc: Simulated Society. (with Instructors Manual) New York: Free Press, 1969.
- Ghetto, Western Publications, New York, 1970.
- Greenwald, A. G., "The Open-Mindedness of the Counterattitudinal Role Player," Journal of Experimental Social Psychology, Vol. 5, 375-388, 1969.
- Greenwald, A. G. "When Does Role Playing Produce Attitude Change," Journal of Personality and Social Psychology, Vol. 16, No. 2, 214-219.
- Greenwald, A., Brock, T., and, Ostros, T. Psychological Foundations of Attitudes, Academic Press, New York, 1968.
- Guetzkow, Harold (ed.) Simulation in Social Science: Readings. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962.
- Inbar, Michael. "Development and Educational Use of Simulations: An Example -- 'The Community Response Game.'" Scientia Paedagogica Experimentalis IV (1) 1969. pp. 5-44.

- Inbar, Michael. "Toward a Sociology of Autotelic Behavior," La Critica Sociologica No. 14, Summer 1970 a.
- Inbar, Michael and Stoll, Clarice S. "Games in Learning." Interchange 1 (2), 1970 b.
- Inbar, Michael and Stoll, Clarice S. Simulation and Gaming in Social Science: The Design Process. New York: Free Press, 1970 (in press).
- Jones, R. M. Fantasy and Feeling in Education. New York: New York University Press, 1968.
- Kidder, S. J. "A Theoretical Framework for Analyzing the Motivational and Emotional Impact of Instructional Simulations on Individual Performance: A Working Paper." Baltimore: The Johns Hopkins University, Center for Social Organization of Schools, September, 1970.
- Kidder, S. J. "Structural Changes in Attitudes and Beliefs as a Function of Experience in Simulation Games: A Working Paper." Baltimore: The Johns Hopkins University, Center for Social Organization of Schools, October, 1970.
- Kiesler, C., Collins, B., and Mitler, N. Attitude Change, Wiley, Inc., New York, 1969.
- Lazarus, R. S., J. R. Averill, and E. M. Opton, Jr. "Towards a Cognitive Theory of Emotion" In Feelings and Emotions by Magda Arnold, pp. 207-229. New York: Academic Press, 1970.
- Livingston, Samuel A. "Simulation Games and Attitude Change: Attitudes Toward the Poor." The Center for Social Organization of Schools Report No. 63, The Johns Hopkins University. April, 1970 a.
- Livingston, Samuel A. "Simulation Games as Advance Organizers in the Learning of Social Science Materials: Experiments 1-3." The Center for Social Organization of Schools Report No. 64, The Johns Hopkins University, 1970 b.
- Livingston, Samuel A. and Stoll, Clarice S. Simulation Games: An Introduction for the Social Science Teacher. New York: Free Press. (in press).
- McLaughlin, B., Learning and Social Behavior, The Free Press, New York, 1971.
- Nesbitt, William A. Simulation Games for the Social Studies Classroom (revised edition), New York: Foreign Policy Association, 1968.
- Nowlis, V., "Mood: Behavior and Experience," in M. Arnold (Ed.), Feelings and Emotions, New York, Academic Press, 1970, Ch. 18.

- Osgood, C. E., Luci, G. J., and Tannenbaum, P. H. The Measurement of Meaning. Urbana, Illinois. University of Illinois Press, 1957.
- Raser, John R. Simulation and Society. Boston: Allyn & Bacon, Inc., 1969.
- Rokeach, M. Beliefs, Attitudes and Values, Jossey-Bass Inc., San Francisco, 1970.
- Rokeach, M. "Long-Range Experimental Modification of Values, Attitudes, and Behavior." American Psychologist, May 1971, Vol. 26, No. 5.
- Rosenberg, M. J. "Cognitive Structure and Attitudinal Affect" in Readings in Attitude Theory and Measurement by Martin Fishbein, pp. 325-331. New York: John Wiley & Sons, Inc., 1967.
- Stoll, Clarice S., Inbar, Michael, and Fennessey, James. "Game Experience and Socialization: An Exploratory Study of Race Differences." The Center for Social Organization of Schools Report No. 31, The Johns Hopkins University. 1969 a.
- Stoll, Clarice S. and McFarlane, Paul T. "Player Characteristics and Strategy in a Parent-Child Simulation Game." Sociometry 32, September, 1969, pp.259-272.
- Stoll, Clarice S. and Inbar, Michael. "Game Experience and Socialization: An Exploratory Study of Race Differences." Sociological Quarterly, Summer, 1970.
- Stoll, Clarice S. "Simulated Environments." Chapter prepared for Robert B. Smith (ed.), Social Science Methods. New York: Free Press (in press).
- Triandis, H. C. "Exploratory Factor Analyses of the Behavioral Component of Social Attitudes." Journal of Abnormal and Social Psychology, 68, 420-430, 1964.
- Triandis, H. C. "Toward an Analysis of the Components of Interpersonal Attitudes." In C. W. Sherif and M. Sherif (Eds.), Attitude, Ego-Involvement, and Change. New York, Wiley, 1967.
- Triandis, H. C., and Malpass, R. S., "Field Guide for the Study of Aspects of Subjective Culture," Technical Report No. 4, 1970, Illinois Studies of the Culturally Disadvantaged, University of Illinois, Urbana, Illinois 61801.
- Triandis, H. G. Attitudes and Attitude Change, New York: Wiley, 1971.

APPENDIX A

- I. Attitude Questionnaire, Part I**
- II. Attitude Questionnaire, Part II**

Instructions for Part I

We would like to know your reactions (feelings about) to a number of concepts related to life in typical inner-city ghettos. On the following pages you will find statements similar to the following:

Ghetto people are poor.

true _____ _____ _____ _____ _____ _____ false

If you feel that the concept being rated (Ghetto people are poor.) is very closely related to one end of the scale, you should place a checkmark as follows:

true ✓ _____ _____ _____ _____ _____ false

or

true _____ _____ _____ _____ _____ ✓ false

If the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your checkmarks as follows:

bad _____ ✓ _____ _____ _____ _____ good

or

bad _____ _____ _____ _____ ✓ _____ good

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

wise _____ _____ ✓ _____ _____ _____ foolish

or

wise _____ _____ _____ ✓ _____ _____ foolish

If you consider the concept to be neutral on the scale, then you should place your checkmark as follows:

probable _____ _____ _____ ✓ _____ _____ improbable

Chetto people are honest.

[illegible]

Being honest is:

[illegible]

Ghetto people are hardworking.

[illegible]

Being a hard worker is:

bad								good
harmful								beneficial
wise								foolish

Ghetto people are irresponsible.

[illegible]

You will be rating two types of statements, a complete sentence like "Ghetto people are poor." followed by an incomplete sentence of the form "Being poor is:" You are to rate each concept on the scales as noted above.

Work at a fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want.

Begin rating the concepts. If you are unsure of the procedure, ask the monitor. Work to the page in the booklet labelled Stop and End of Part I.

lse

False

False

ood

ood

oolish

oolish

nprobable

Being irresponsible is:

bad	_____	_____	_____	_____	_____	_____	_____	good
harmful	_____	_____	_____	_____	_____	_____	_____	beneficial
wise	_____	_____	_____	_____	_____	_____	_____	foolish

Ghetto people are immoral.

true	_____	_____	_____	_____	_____	_____	_____	false
impossible	_____	_____	_____	_____	_____	_____	_____	possible
probable	_____	_____	_____	_____	_____	_____	_____	improbable

Being immoral is:

bad	_____	_____	_____	_____	_____	_____	_____	good
harmful	_____	_____	_____	_____	_____	_____	_____	beneficial
wise	_____	_____	_____	_____	_____	_____	_____	foolish

Ghetto people are law-abiding.

true	_____	_____	_____	_____	_____	_____	_____	false
impossible	_____	_____	_____	_____	_____	_____	_____	possible
probable	_____	_____	_____	_____	_____	_____	_____	improbable

Being law-abiding is:

bad	_____	_____	_____	_____	_____	_____	_____	good
harmful	_____	_____	_____	_____	_____	_____	_____	beneficial
wise	_____	_____	_____	_____	_____	_____	_____	foolish

STOP!

END OF PART I

Abstract

The relationship between internal-external control of reinforcement and attraction to others who vary in susceptibility to persuasion was investigated. Attraction was assessed after subjects were differentially successful in changing the opinions of two confederates. Results from a behavioral measure of attraction supported the hypothesis that internals are more attracted to others they are able to influence, whereas externals do not differentiate their attraction on the basis of others' persuasibility. However, on an attitudinal measure, there was a trend for internals to be more attracted to the confederate they were less successful in persuading. A possible resolution of these results in terms of anticipation of interaction was discussed.

Center for the Organization of Schools

REPORT No. 111

AUGUST, 1971

EMOTIONAL AROUSAL AND ATTITUDE CHANGE
DURING SIMULATION GAMES

STEVEN J. KIDDER

The Johns Hopkins University

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ABSTRACT

Physiological and behavioral indices of emotional arousal and mood during performance in a simulation game were investigated. The hypotheses tested were: (1) there will be attitude change following participation in the social simulation game, Ghetto; (2) this change in attitude will be related to the players' emotional involvement in the game as measured by heart rate and self-reported mood (i.e., both covert and overt measures); and there will be a "spread of affect" at times during the game, i.e., the emotional arousal (as indicated by fluctuations in heart rate) experienced by one participant in the game situation, would generalize to other participants. The essence of simulation games was assumed to be to capture (via structured situations) the psychological and environmental determinants of particular cognitions. The attitudes recorded were those of the 15 undergraduate players toward the consequences of living in a ghetto. The results provide some support for the validity of the hypotheses, but the complexity of the relationships calls for more controlled experimentation. Various explanations for attitude change through the use of simulation games are presented. (Author/KS)

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EMOTIONAL AROUSAL AND ATTITUDE CHANGE
DURING SIMULATION GAMES

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INTRODUCTORY STATEMENT

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through five programs to achieve its objectives. The Academic Games program has developed simulation games for use in the classroom, and is studying the processes through which games teach and evaluating the effects of games on student learning. The Social Accounts program is examining how a student's education affects his actual occupational attainment, and how education results in different vocational outcomes for blacks and whites. The Talents and Competencies program is studying the effects of educational experience on a wide range of human talents, competencies and personal dispositions, in order to formulate--and research--important educational goals other than traditional academic achievement. The School Organization program is currently concerned with the effect of student participation in social and educational decision making, the structure of competition and cooperation, formal reward systems, ability-grouping in schools, and effects of school quality. The Careers and Curricula program bases its work upon a theory of career development. It has developed a self-administered vocational guidance device to promote vocational development and to foster satisfying curricular decisions for high school, college, and adult populations.

This report, prepared by the Academic Games program, explores the use of physiological and behavioral indices of arousal and mood during performance in a simulation game. The results, with those of further controlled experimentation, may provide guidelines for the optimum use of social simulation games in the classroom.

ACKNOWLEDGMENT

I thank Gail M. Fennessey and Phyllis K. Wilson for their help in completing this study. I also thank Mr. Harold T. Ray, Regional Representative, Narco Bio-Systems Inc., Houston, Texas, for his help in lending the instrumentation used in the present study.

ABSTRACT

The present study explores the use of physiological and behavioral indices of emotional arousal and mood during performance in a simulation game. It was hypothesized that the above indices of general affect would be related to changes in attitudes, the cognitive components of which are dealt with in the simulation game Ghetto. In addition, it was hypothesized that the emotional arousal (as indicated by fluctuations in heart rate) experienced by one participant in the game situation would generalize to one or more subjects in the same game. The results provide some support for validity of these hypotheses.

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INTRODUCTION

The present study analyzes the possible relationship between emotionality in a simulation game¹ and attitude change. This implies a close relationship between the cognitive and affective components of learning situations. Their interaction may result in subsequent behavioral change which can be studied immediately after a gaming exercise or after traditional approaches to teaching.

The importance of a student's involvement in the learning situation to the solidification of factual knowledge or skills may not be apparent immediately following game play. However, if a gaming approach were compared three months later to a traditional classroom approach (across the same content domain), the simulated exercise might be seen to produce longer lasting changes in knowledge and attitudes. Could longer lasting behavioral changes be a function of the greater involvement experienced in a simulation game? Answering this question requires some knowledge of the relationship between involvement and learning or attitude change during simulated exercises. The present study deals directly with this relationship.

In general, the importance of feeling (mood), emotion, cognition, and affect has been only recently emphasized. (See Feelings and Emotions

by Magda Arnold, 1970; Physiological Correlates of Emotion by Perry Black, 1970; Cognition and Affect by John Antrobus, 1970; Fantasy and Feeling in Education by Richard Jones, 1968.) Usually, research procedures in this area rely heavily on subjective measures of cognition and affect. When physiological parameters are included as objective measures of affect, they are usually recorded from one individual in highly controlled (and sometimes contrived) situations. Seldom are overt and covert measures of affect recorded on several individuals simultaneously, as is done in this study.

Some interesting theoretical relationships between cognition and affect (which may have theoretical implications for the present study) have been proposed recently. Lazarus, Averill, and Opton (in Arnold, 1970) have proposed a cognitive theory of emotion. They suggest that emotions be considered as complex response syndromes which can be characterized from three perspectives: (a) biological, (b) cultural, and (c) cognitive. They regard individuals as "evaluating organisms." Each person's evaluations are based on cognitive activity which can have an associated emotion. These authors also note that the determining conditions of these cognitions are of two types: (1) situational (referring to environmental factors), and (2) dispositional (referring to the psychological make-up of an individual).² Both of these conditions are very much a part of instructional simulations. The essence of simulation games is to capture (via structured situations) the psychological and environmental determinants of particular cognitions. This cognitive theory of emotion parallels our concerns in the present study (i.e. attitude modification, mood, arousal, generalization of affect).

Affective experience has been tricotomized by Ewert (in Arnold, 1970) as follows: (a) moods, (b) feelings, and (c) emotions. Ewert suggested that feelings and emotions could be regulated biologically and socially, respectively. Ewert also equated emotions with attitudes towards one's social environment (this general conceptual framework has been related to instructional simulations by Kidder, 1970a, 1970b). Thus, there may be a relationship, as this study hypothesizes, between the emotional impact of a simulation on the participants and a resulting attitude change.

The measurement approach to attitude change used in this study is based in Fishbein and Raven (in Fishbein, 1967). Fishbein and Raven hypothesized that attitudes have both belief and affective components. In addition, Anderson and Fishbein (in Fishbein, 1967) note that an " . . . attitude toward the [an] object is predicted to be a part function of the total affect associated with each of the beliefs about the object." The theory of Rosenberg (in Fishbein, 1967) is closely related to this approach. In fact, Rosenberg equates attitudes and beliefs with affective responses: " . . . attitude (here defined as relatively stable affective responses to an object)." This hypothesis is nearly synonymous with that proposed by Ewert, above.

The theoretical basis of the present study is related to the work of Triandis (1971), Triandis and Malpass (1970) and Greenwald (1969, 1970). The behavior of an individual participating in a simulation game has obvious cognitive and affective components, plus simulated realizations of behavioral intentions. These components are incorporated in a theory of

interpersonal attitudes (a cornerstone of social simulations) proposed and amplified by Triandis (1967, 1970). In addition, Triandis and Malpass (1970) note that measurement procedures are available for evaluating interpersonal attitudes " . . . by examining the cognitive component by means of logical tasks such as the antecedent-consequent method, the affective component by means of Osgood's semantic differential (Osgood, Suci, and Tannenbaum, 1957) and the behavioral intentions by means of the behavioral differential (Triandis, 1964)." The affective and belief components of selected attitudes were evaluated in the present study.

The theoretical relationship between the present study and those conducted by Greenwald (1969, 1970) is found in the structured role-playing of participants in social simulations and the information they are exposed to. In the game Ghetto (1970), players (when white, middle-class, and relatively naive) are usually exposed to counterattitudinal information or information opposing their own perceptions. With this in mind, the relationship between role-playing in simulation games and resulting attitude change can be interpreted within Greenwald's "amended learning model of persuasion" as clarified by the following excerpts from his works:

- (1) It was concluded that the effectiveness of role playing in inducing opinion change may be due in large part to its success in getting subjects to evaluate information opposing their own position in unbiased fashion. (Greenwald, 1969)

- (2) These results were interpreted in terms of an associative model of persuasion, and it was concluded that attitude change through role playing may depend on the role player's having an opportunity to consider counterattitudinal information that he has not previously rejected. (Greenwald, 1970)

Thus, attitude change may result from modifications of the cognitive (Greenwald; Triandis) and/or affective components (Triandis; Rosenberg; Fishbein and Raven; Ewert; Lazarus, et al.) of the original attitude.

The major hypotheses of the present study are: (1) There will be attitude change following participation in the social simulation game, Ghetto. (2) This change in attitude will be related to the player's emotional involvement in the game as measured by heart-rate and self-reported mood. (3) There will be a "spread of affect" at times during the game, meaning that one subject's excitement may excite another, causing positive correlations between the subject's heart-rates during the game.

To provide preliminary support for these hypotheses, the following measures were taken on participants in the social simulation game Ghetto (1970): (1) heart-rate in beats per minute as a covert measure of affect or involvement; (2) self-report measures of mood³ at the beginning, during, and at the end of the simulation experience, to provide a second indication of involvement; (3) observations of each subjects' mood at the beginning, during, and after the game to provide a third measure of involvement in the game; (4) self-report measures of attitudes (before and after the game) whose factual characteristics are manipulated in the simulation game so that a participant is exposed, in an unthreatening environment, to information and situations counter to the participants' original conceptions of that same environment.

METHOD

Sample

Due to the complexities of recording physiological parameters from four individuals simultaneously during performance in the simulation, the sample was quite small. Fifteen undergraduate males at Johns Hopkins were paid to participate. Five different subjects participated in each game session. Heart rate was recorded simultaneously from four subjects in each game. However, one recording was terminated due to electrode failure during game one. Thus, complete heart rate records were available for eleven subjects.

Procedure

The five subjects sat at one end of a large table in a conference room. A causal setting was desired, similar to a classroom, not like a laboratory. Three sessions were played with three different groups of five subjects each. The social simulation game used for each session was Ghetto (1970). Heart rate was monitored on four subjects during each session. A Narco Bio-Systems Physiograph^R Six was used for recording purposes. Hardwire recordings were taken from three subjects, the wires leading under large, closed doors immediately behind the subjects. Telemetric recording was taken from one subject in each game session. Surface electrodes were used on all Ss. The two recording electrodes were attached to the upper distal surface of each subject's arm. The reference electrode was attached to the proximal surface of the left forearm. No reference electrode was necessary on the telemetered subject.

Baseline data were obtained from each subject. Then each was required to complete two pre-tests, one on attitudes and beliefs toward ghetto people (see Appendix A, Instrument I), and a second on the consequences of living in a ghetto (see Appendix A, Instrument II). The heart rate was recorded from four subjects simultaneously for 88 minutes during game one, 125 minutes during games two and three. Due to the lag between the base rate recordings and the "Introduction" to the game, and based on the fact that arousal and involvement during the game were of primary interest, the four simultaneous heart-rate recordings from the middle of the Introduction to each game through the post tests are reported.

While recording the heart-rates of the individual subjects, two measures of mood or involvement were taken. Both measures were based on the Mood Adjective Check List developed by Nowlis (1970). One was in self-report form (see Appendix B, Instrument I); the other (see Appendix B, Instrument II) was completed on each subject by the person conducting the game. The self reports and observations on mood or general affect were completed three times during each game: (1) immediately following the introduction to the game; (2) approximately mid-way through the game; and (3) after the game was terminated (but before the post-test instruments were completed).

Variables

The dependent variables of interest in the present study were: (1) heart rate on each subject throughout the game experience as a measure of general involvement; (2) scores on an instrument dealing with beliefs and attitudes toward ghetto people; (3) scores on an instrument dealing with the consequences

of living in a ghetto; (4) scores on the Mood Adjective Check List (MACL) completed three times by each game participant; (5) scores on the Modified Check List (MCL) completed by the game leader three times on each subject during game play.

The belief and attitude instrument (see Appendix A, Instrument I) is based on the form and theory originally suggested by Fishbein and Raven (1967). This approach is based on the measures of attitude suggested by Osgood et al. (1957). Fishbein and Raven (1967) modified the approach somewhat by including belief in the concept being rated along with the evaluative dimensions (positive or negative affect) of the concept. The form of the items on this instrument is provided in the following example:

<u>Ghetto people are honest.</u>													
true	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	false
impossible	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	possible
probable	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	improbable
 Being honest is:													
bad	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	good
harmful	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	beneficial
wise	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	foolish

The dependent measures of interest then were the sum across the three seven-point scales on the belief component and the sum across the three seven-point scales for the affective component. These two sums on each concept were calculated for each subject before and after the game experience.

An attempt was made to factor analyse the scales on the instrument designed to tap the cognitive aspects of attitude toward ghetto people in order to develop sub-test scores within the instrument. Unfortunately, there were too many scales and too few subjects to validate the obtained factor structure. Thus, scores from this instrument were not used in subsequent analyses.

The Mood Adjective Check List completed by each subject and recorded by the game leader was obtained on the participants in the last two game sessions only. The instrument (see Appendix B) was based on those developed by Nowlis (1970). Each subject was simply asked to circle his choice on the following scale:

angry vv v ? no

where

vv means you definitely feel this way at the moment

v means you feel slightly this way at the moment

? means you cannot decide whether you feel this way or not

no means you are definitely not feeling this way at the moment

From these self-report measures taken by each subject at the beginning, middle, and end of the game, eleven factor scores were derived from the sums across particular adjectives checked. For instance, on each MACL, the symbols vv, v, ?, no are valued 3, 2, 1, 0, respectively. Then the values associated with particular adjectives (see below) were summed to provide mood factor scores. The moods and their associated adjectives were:

1. Aggression - angry, defiant, rebellious
2. Anxiety - clutched up, fearful, jittery
3. Surgency - carefree, playful, witty
4. Elation - elated, overjoyed, pleased
5. Concentration - concentrating, engaged in thought, intent
6. Fatigue - drowsy, sluggish, tired
7. Vigor or Activation - active, energetic, vigorous
8. Social Affection - affectionate, kindly, warmhearted
9. Sadness - regretful, sad, sorry
10. Skepticism - skeptical, suspicious, dubious
11. Egotism - boastful, egotistic, self-centered

Only the sum of the MACL factor scores for Surgency, Elation, and Activation was plotted for each subject and correlated with heart-rate variability and attitude change scores.

The modified checklist (MCL) used by the game leader involved sub-sections of the MACL. It contained some of the adjectives for all of the original mood factors except Surgency and Social Affection. The scale for each adjective was:

angry - Yes So-So No

where

yes = 3

So-So = 2

No = 1

The mood factor and associated adjective(s) were:

1. Aggression - angry
2. Anxiety - fearful, jittery
3. Elation - elated, overjoyed, pleased
4. Concentration - concentrating
5. Fatigue - sluggish
6. Vigor or Activation - active
7. Sadness - sad, sorry
8. Skepticism - skeptical, suspicious
9. Egotism - self-centered

These factors were recorded with the MACL scores. Little additional information, beyond the MACL, was gained from the MCL records.

Analyses

Due to the exploratory nature of the present study, the analyses were mainly correlational. Additional descriptive statistics were employed where clarification was necessary. The heart-rate data was plotted for each subject within each game in order to observe parallel fluctuations (generalization of "affect") across subjects participating in the same game. Each game was artificially tricotomized in order to provide better understanding of each game in progress. This was especially important with the heart-rate data because an attempt could then be made to find out if the involvement experienced by one player generalized more consistently during a particular portion of the game experience. A study was then made of the intercorrelations of heart-rate variability, mood indicators, and the affective components of attitude change scores in an attempt to validate some aspects of the study's original hypotheses. Initially, positive relationships among these indicators were expected.

RESULTS

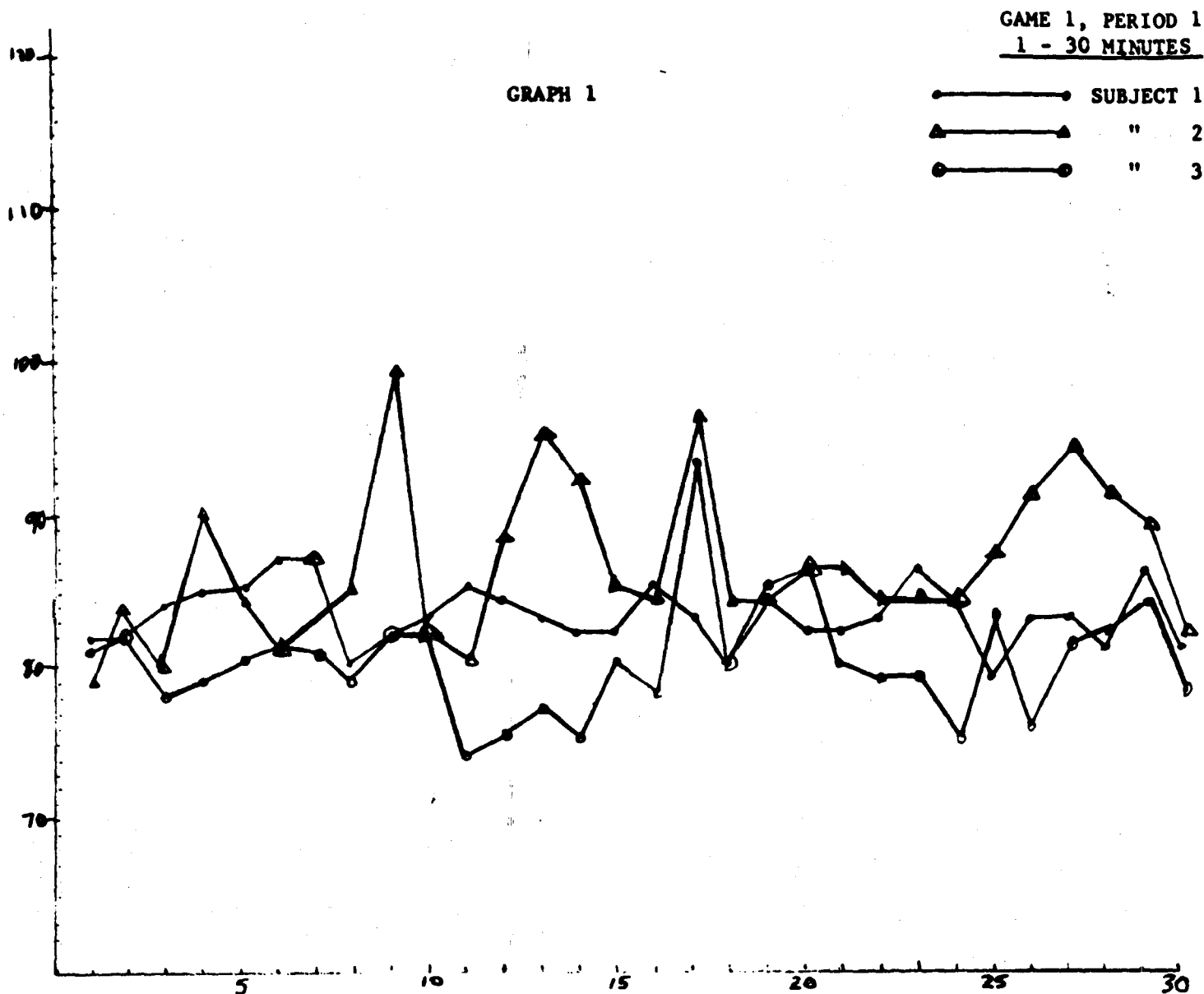
The results from the present study are reported in the following order and form: (1) heart-rate data plotted for subjects one, two, and three of game one, period one plus descriptive statistics, followed by the same information for periods two and three of game one; (2) heart-rate data plotted for subjects one, two, three, and four, period one, game two, followed by descriptive statistics on this heart-rate data and summary data for the self-reports and observations of mood for this period in the game; followed by the same data for periods two and three of game two; (3) heart-rate data plotted for subjects one, two, three, and four, period one, game three, followed by descriptive statistics for this heart rate data and summary data for the mood indicators; followed by the same data for periods two and three of game three; (4) summary statistics for the belief and attitude measures taken before and after the game; (5) descriptive statistics and intercorrelations of the mood indicators, variance of heart-rate for each period and each game, plus the affective components of the attitude change scores.

Heart-Rate Data

Graph 1 contains the heart rates in beats per minute for subjects 1, 2, and 3 of game one, period one. Period one for game one represents the first thirty minutes of game one beginning near the middle of the introduction by the game leader. A close look at Graph 1, especially between minutes 15 and 20, reveals some "following" between subjects 2 and 3. This type of following was hypothesized in the beginning of this study. Theo-

13
20

HEART
RATE
IN
BEATS
PER
MINUTE



MINUTES - (from introduction of game to 30 minutes of play)

retically, the following should increase during the game as participants become aware of each others' actions and begin to react to them.

Table 1 supports the conclusion that subjects 2 and 3 are responding to the game environment in similar ways. Table 1 also suggests that the variability of heart-rates at the beginning of play is quite low when compared to periods two and three (see Graphs 2 and 3 below).

TABLE 1

Game One - Heart-Rate Data

<u>Period 1</u>				<u>Intercorrelation Matrix</u>		
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>	
1	83.2	30	5.00	1	<u>1</u>	<u>2</u>
2	86.9	30	23.2	1	1.000	-0.078
3	80.3	30	11.7	2		1.000
				3		1.000

Table 2 provides the descriptive statistics for the data in Graph 2. One will notice that subject two has increased the variability in his heart-rate due to game participation from 23.2 in period 1, to 266.3 in period 2.

TABLE 2

Game One - Heart-Rate Data

<u>Period 2</u>				<u>Intercorrelation Matrix</u>		
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>	
1	81.8	30	4.5	1	<u>1</u>	<u>2</u>
2	82.9	30	266.3	1	1.000	-0.097
3	75.3	30	10.5	2		1.000
				3		1.000

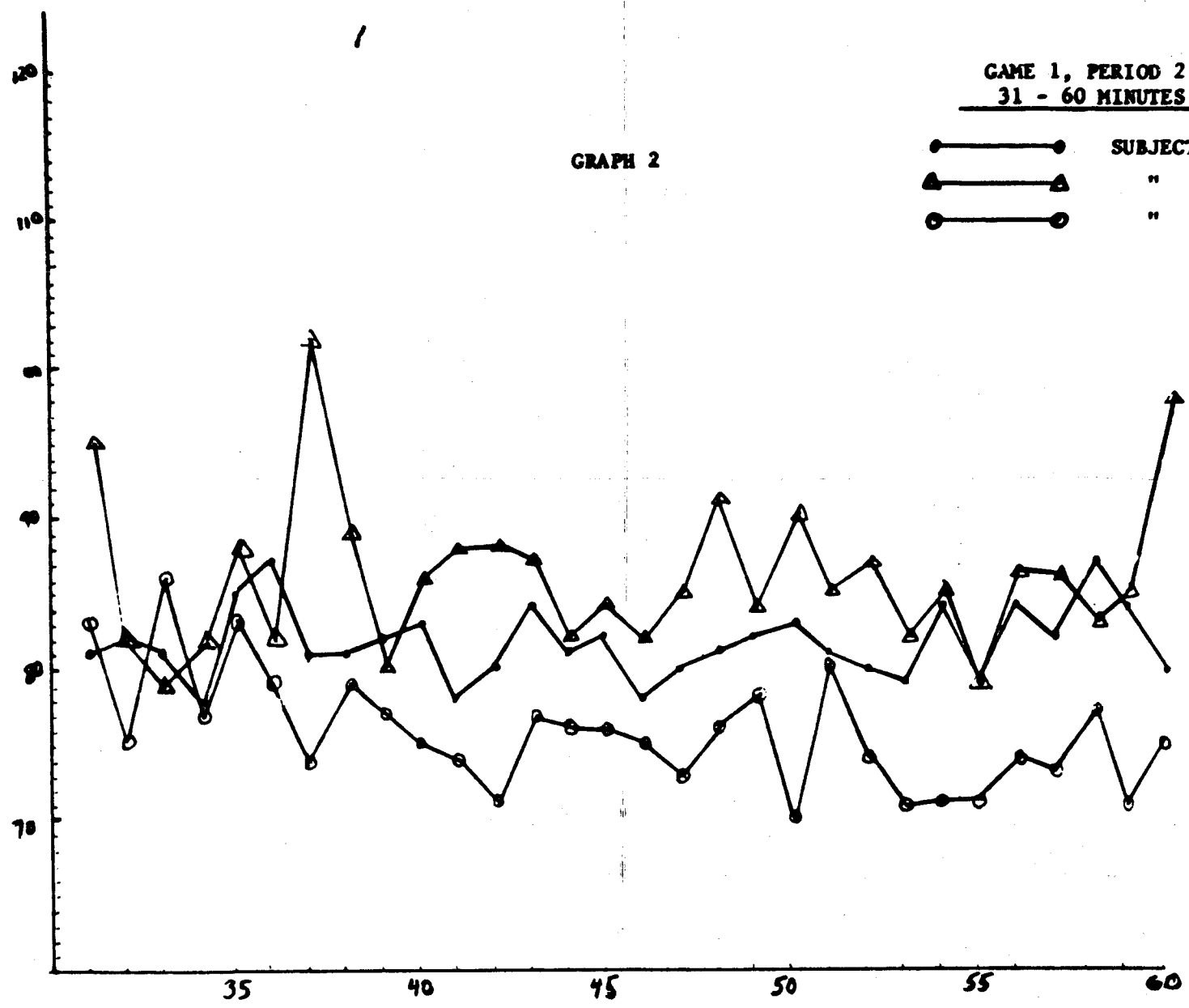
1

GRAPH 2

GAME 1, PERIOD 2
31 - 60 MINUTES

—●— SUBJECT 1
—▲— " 2
—○— " 3

HEART
RATE
IN
BEATS
PER
MINUTE



MINUTES - (from minute 31 to minute 60)

This seems to reflect rather individualistic play in the game with little attention being paid to the other participants. In fact, the intercorrelations in Table 2 reveal no consistent following by subjects.

Graph 3 provides the heart-rates for subjects one, two, and three, game one, period three. This is a continuation of Graph 2, period 2. One will notice that subject two maintains his high variability while subjects one and three maintain quite low variability and have begun "following" each other. In fact, subject three's affective response as reflected in his heart-rate seems "conditioned" by subject one's responses. Subject three's heart-rate at times parallels subject one's, with a time lag of about two minutes. This relationship between the reactions of subject one and subject three is apparent in Table 3 where their correlation equals 0.462.

TABLE 3
Game One - Heart-Rate Data

<u>Period 2</u>				<u>Intercorrelation Matrix</u>		
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>Subject</u>	
				<u>1</u>	<u>2</u>	<u>3</u>
1	80.5	27	11.9	1	1.000	.462
2	82.9	27	222.7	2	1.000	.146
3	72.0	27	12.3	3		1.000

The latter correlation also lends support to the hypothesis that subjects in a simulation game may experience a "spread of affect" at particular times in the simulation.

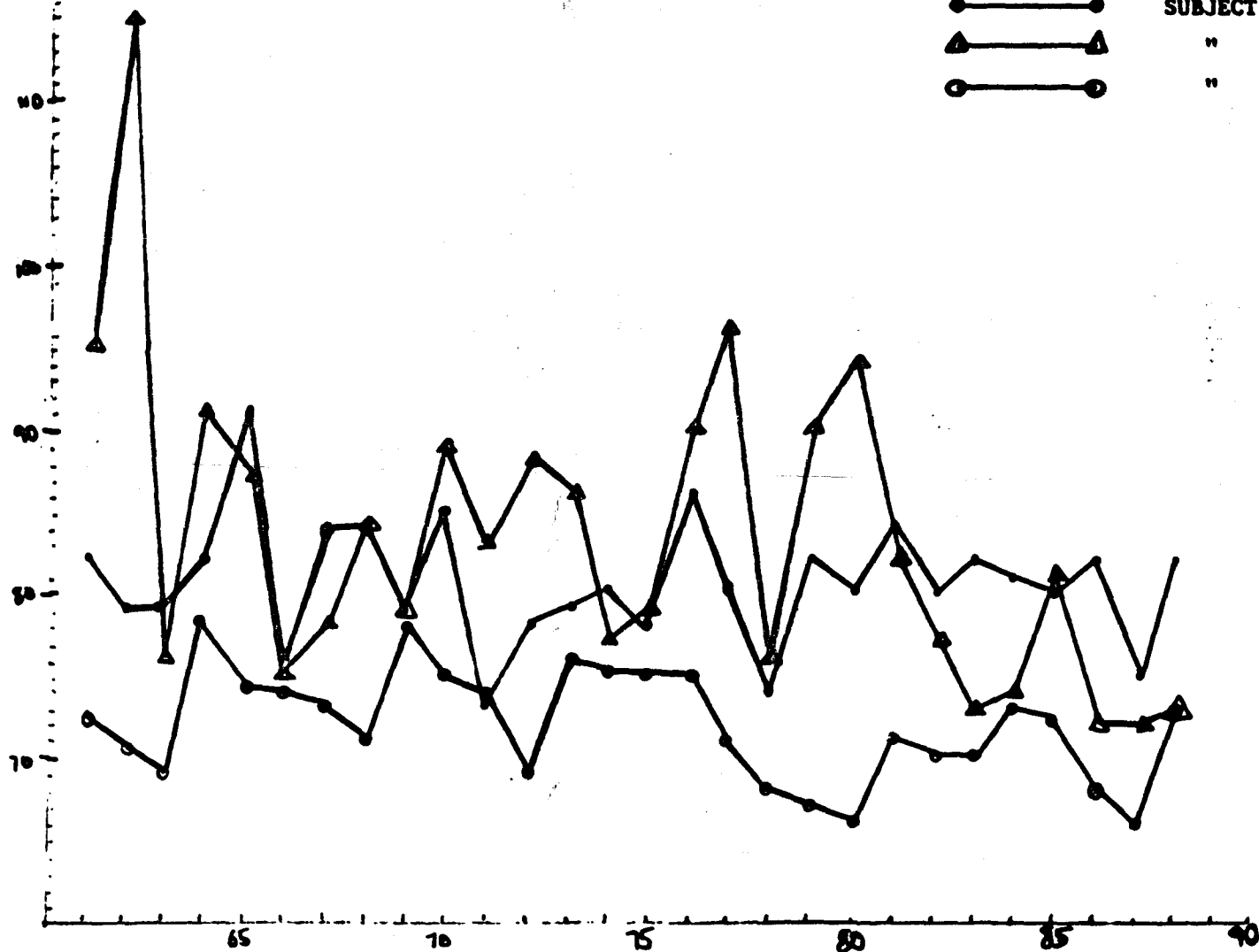
Graph 4 contains the record for subjects one, two, three, and four of Game 2, period 1. This period in game two provides one of the most consis-

HEART
RATE
IN
BEATS
PER
MINUTE

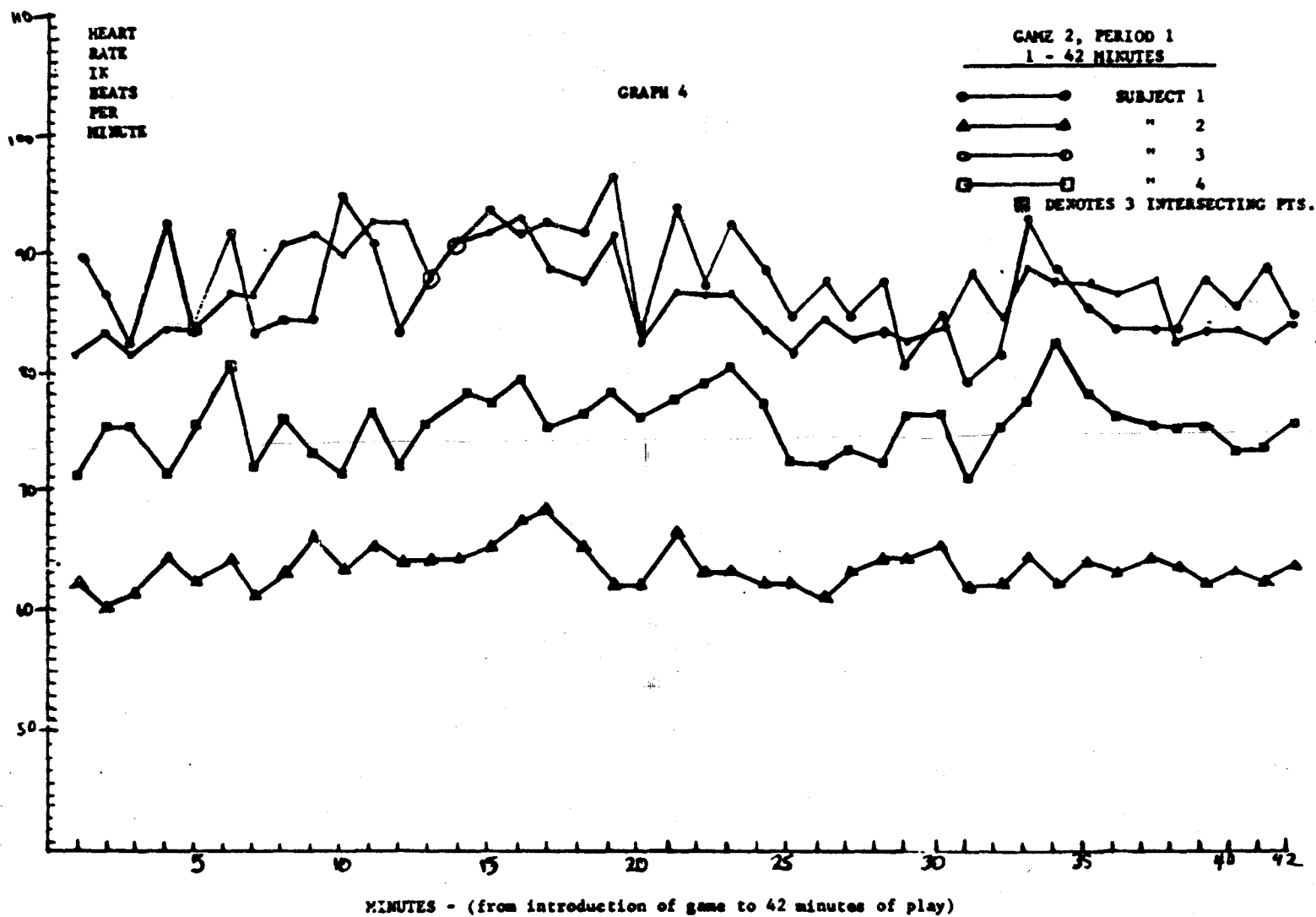
GRAPH 3

GAME 1, PERIOD 3
61 - 88 MINUTES

—●—	SUBJECT 1
—▲—	" 2
—○—	" 3



MINUTES - (from minute 61 to minute 88 - end of graph and game)



tent patterns of generalized arousal of all the games. Table 4 provides information on the closeness of these relationships. Subjects one and two had a heart-rate intercorrelation of 0.512. If reference is made

TABLE 4

<u>Game Two - Heart-Rate Data</u>					<u>Intercorrelation Matrix</u>			
<u>Period 1</u>					<u>Subject</u>			
<u>Subject</u>	<u>Mean</u>	<u>N</u>	<u>Variance</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1	85.7	42	11.8	1	1.000	.512	.392	.281
2	63.3	42	2.8	2		1.000	.363	.210
3	86.9	42	17.6	3			1.000	.308
4	75.2	42	7.4	4				1.000

to Graph 4, one will notice this parallel phenomena with a "reaction" time lag of about thirty seconds between subject two and one. Again, it should be noted that the variability of all subjects in period one is relatively low.

Graph 5 contains the heart-rate data on the four subjects in game two, period two. By comparison with Graph 2 of game one, the middle portion of game two is also quite variable. The heart-rate variance of subjects two and three has increased considerably. Table 5 suggests that the close relationship between subjects one and two at the beginning of the game has deteriorated. However, subject four seems to be responding to subject one at the beginning of period two. There is a negative relationship between subjects one and three for period two (i.e., as three peaks, one decelerates).

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