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ABSTRACT

This document presents a pilot training program which developed, diffused, and evaluated the application of a selected group of research and development (R&D) techniques for planning and initiating change in the public schools. The training model resulted from suggestions of an interdisciplinary development team at the University of Kansas. The two innovative strategies used in the model were the content and process phases. The content phase was composed of 11 content skill areas integrated into a Planning, Programming, and Budgeting System (PPBS). Competence in these conceptual and technological skills was assumed to be an integral part in the development of the R&D program. The process phase ensured the application and refinement of the content phase for the public school setting by implementing three stages: a) inputs or resources, b) activities, and c) outputs or products. A detailed description of the pilot test for the model is included in the report along with data for the model's evaluation and suggestions for refinement. The appendixes present a) problem-solving plans and procedures, b) a flow chart for the model used in the Paola School District, c) a plan for coordinating curricular activities in the northwestern attendance area, d) a flow chart and opinionnaires developed by the Career Education Task Team, and e) evaluation instruments. (BRB)

Final Report

Project No. RO 2 0576
Grant No. OEG-0-72-1252

A CONTENT-PROCESS MODEL FOR TRAINING EDUCATIONAL R&D PRACTITIONER, DIFFUSER, AND DEVELOPER TEAMS

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Lawrence, Kansas

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U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

National Institute of Education

TABLE OF CONTENTS

LIST OF TABLES

Table | Page

A CONTENT-PROCESS MODEL FOR TRAINING EDUCATIONAL R&D PRACTITIONER, DIFFUSER, AND DEVELOPER TEAMS

Purpose and Overview

Hack, et al. (1971) asserted that, if the public schools are going to anticipate and monitor major changes efficiently, R&D techniques must be applied to the process of change itself. However, the discovery of new R&D techniques does not appear to be enough to bring them into application in the public schools. Seemingly, for initial and continued use of new R&D methods, we must have the following: developers to translate basic science into technology; diffusers to package, to distribute, and to assist in the application of new methodology; and, finally, practitioners willing to apply the technology. Furthermore, these applications, at least initially, should be made in well monitored pilot-tests to produce feedback for continued refinement in the technologies.

Based on these assertions, the primary purpose of this pilot training program was to develop, to diffuse, and to evaluate the application of a selected group of R&D techniques for planning, decision-making and initiating change in the public schools. The training model was developed by combining the suggestions from each member of an inter-disciplinary development team at the University of Kansas. The result of this team activity was a R&D training model with two major innovative strategies. (a) A content phase designed to collect a battery of new R&D skills, to integrate them into a PPBS framework, and to provide climate indicators and interpersonal skills for facilitating organizational change. (b) A process phase designed to insure the successful application of the content phase by producing a coordinated problem solving unit composed of practitioners, diffusers, and developers.

Content Phase

The content phase of the model is presented in Table 1. This portion of the model is composed of eleven (11) content skill areas integrated into a Planning, Programming, and Budgeting System (PPBS). Competance in these conceptual and technological skills was assumed to be a fundamental prerequisite for successfully initiating a R&D program in an educational organization.

Table 1

Content Phase of the Training Model

R and D Concepts and Methodologies →	PPBS Step
Systems Approach	
Delphi Forecasting Technique →	-Planning
Trend Projection →	
Flowcharting, CPM, PERT →	
Curriculum Planning →	
Facilities Planning →	
Precision Classroom Teaching →	-Programming and -Implementing
Task Teams →	
Strategies for Planned Change →	
Cost-Effectiveness Analysis →	-Budgeting
Review of Program Evaluation Methodologies →	-Evaluation
Chart Acceleration Analysis →	

Process Phase

The process phase of the model is presented in Table 2. This portion of the model can be conceptualized as being composed of the following three stages: inputs or resources, throughputs or activities, and outputs or products. The purpose of this aspect of the model is to insure the application and refinement of the content phase for the public school setting.

Table 2

Process Phase of the Training Model

Inputs →	Throughputs →	Outputs
Program Developers Diffuser Trainees Practitioner Trainees	Content Development Orientation of Diffusion Trainees Intensive Training Conference Reentry Workshops Mini-lab Workshops Inservice Workshops Technical Assistance Monitoring and Evaluating Usage Academic Program for Diffusion Trainees A. Interdisciplinary B. Field Based	Development Team A. With Training Materials B. Using Added R&D Skills in the University C. New University Relations Diffusers A. With R&D Skills B. With Field Experience C. With Advanced Degrees Practitioners A. Using New R&D Skills B. Solving Change Related Problems
Inputs ←		→ Outputs
	Throughputs ←	

The remainder of this report is divided into three major sections. The first section is a detailed description of the pilot-test of the content-process training model during the 1972-73 academic year. This section is presented in a chronological sequence of the major events and activities. The second section is composed of the data for the model's evaluation. The last section of the report consists of a refined content-process training model.

Pilot Test of the Content-Process Training Model

Inputs

Program Developers

The program development team was assembled to represent intra- and inter-disciplinary backgrounds with expertise in at least one of the proposed content training areas. The intra-disciplinary or educational portion of the staff included the following specialties: planning, finance, human relations and change, research and evaluation, and curriculum development. The inter-disciplinary portion of the development staff counter balanced the educational portion with the following specialties: business financial accounting and planning, social psychology and organization development, and business administration and human relations. The developers and a brief vita for each follows.

Baumgartel, Howard. Professor of Social Psychology and Associate Dean for the College of Liberal Arts and Sciences. Professor Baumgartel is an established trainer and consultant. His specialties include organization development and research. He was primarily responsible for coordinating the implementing portion of the content phase of the training model.

Bentz, William. Assistant Professor of Business. Professor Bentz specializes in systems analysis, accounting, and planning. He was primarily responsible for developing the systems approach and cost effectiveness analysis portions of the model.

Crawford, George. Assistant Professor of Educational Administration. Professor Crawford is a specialist in building administration, facilities, and planning. He developed the facilities planning section of the planning content phase.

Glasnapp, Douglas. Assistant Professor of Educational Research. Professor Glasnapp specializes in research design and methodology, measurement, and evaluation. He was responsible for developing the understanding and applications of recent advances in curriculum evaluation methodology.

Guenther, John. Associate Professor of Curriculum and Instruction. Professor Guenther is a specialist in curriculum development, social studies education, and career education. He developed the presentation for the curriculum planning content area.

Hatley, Richard. Assistant Professor of Educational Administration. Professor Hatley is a specialist in educational finance and planning methods. He was primarily responsible for developing the material for flowcharting, critical path method (CPM), and program evaluation and review techniques (PERT).

Lindsley, Ogden. Professor of Educational Administration and Project Co-Director. Professor Lindsley specializes in forecasting techniques,

administrative charting, and precision teaching. He developed the presentations for trend projections, precision teaching, and chart acceleration analysis.

Miskel, Cecil. Associate Professor of Educational Administration and Project Co-Director. Professor Miskel specializes in organizational and change theory and planning methodologies. He was responsible for the materials related to the Delphi technique and general project administration.

McConnell, Keith. Assistant Professor of Business Administration. Professor McConnell is a specialist in human relations and organizational development. He worked with Professor Baumgartel on the implementing portion of the content phase and was primarily responsible for the development of the training materials.

Diffuser Trainees

The role of the diffuser trainees was to establish and maintain working relationships between the practitioner trainees in the field and the developers on the University of Kansas campus. To accomplish this the diffuser trainees assisted, as part of the training staff, throughout the intensive training conference held in August. Based on the complementary skills and the resulting relationships with the practitioner trainees that emerged during the training conference, the diffusers continued the relationships by providing field assistance for the training year. Specifically, the diffusers were to take the primary responsibility for providing technical assistance and preservice, mini-lab, and inservice workshops in the public schools. The other one-half of the diffusion assistants' time was given to their academic programs. In other words, the trainees enrolled in an interdisciplinary doctoral program with emphasis on research design and methodology, organizational administration, and the social sciences. Concurrently, these trainees practiced R&D diffusion through regular workshops, personal interaction, and telephone contacts with the practitioner R&D task-teams in the school districts.

Five (5) individuals were recruited to train for the R&D diffusion manager role. These trainees met the regular requirements for admission to graduate study at the University of Kansas. In addition, the following priorities guided the trainee selection: (a) practitioners presently working in districts with pressing urban or rural problems, (b) members of minority races, and (c) females. Table 3 presents a summary of the diffuser trainees' demographic characteristics.

Table 3

Summary of Diffuser Trainees' Demographic Characteristics

Diffusion Trainee	Sex[a]	Ethnic Division[b]	Highest Degree and Major	Projected Major for Doctorate
1	M	C	M.S. Bus. Admin.	Educ. Admin.
2	F	C	M.A. Spch. Com. & Hum. Rel.	Educ. Admin.
3	F	C	M.E.D. Spec. Educ.	Educ. Admin.
4	M	C	M.S. Educ. Admin.	Educ. Admin.
5	M	C	M.A. Educ. Admin. M.A. Spec. Educ.	Educ. Admin.

[a]M--Male; F--Female.
[b]C--Caucasoid.

In addition to the male-female ratio and the different academic backgrounds, further diversity was added by work experience and geographic location. For example, from 1969-72 Diffuser 3 had been the Director of Research and Planning for the Greater Omaha Association for Retarded Children and the Eastern Nebraska Community Office of Retardation. Diffuser 4 had been an Assistant Principal in Stanley, Kansas after being a Vice President of F.W. Strauss Corporation, Chicago. Diffuser 5 had been a Principal at Dennis B. O'Brien Elementary School, Rockoway Township, New Jersey from 1966-1972.

Except for the lack of representation from minority ethnic divisions, the criteria for recruiting diffusers were generally met. However, minority applicants were recruited and offered trainee positions but none accepted the offer.

Practitioner Trainees

Hierarchically differentiated task-teams were to be recruited from school districts to participate in the year long training program. The task-team was to include the superintendent or his top assistant, at least one representative from the R&D department, an individual from pupil services, and other persons recommended by the superintendent. This differentiated structure for the task-teams was preferred for the following reasons: (a) input to the school district can be made at several different levels; (b) the upper level administrators can lend authority to

implementing the R&D technologies; and (c) the task-team members can give mutual support in the face of resistance, illness, or termination.

A second recruiting emphasis was on district task-teams with female and minority members from school districts with pressing urban or rural educational problems. A third consideration in selecting the practitioner participants was that each should have basic skills in traditional statistical design and research methodology. The rationale for this selection criterion was that the basic research skills only were to be polished and reviewed. Consequently, this would allow more time for teaching the new R&D technologies that logically build on the previous training in these areas. Since most of the target training population had masters degrees, this condition probably did not decrease the trainee population significantly. A final factor in the selection of the practitioner trainees was the demonstration of a commitment to use the new R&D technologies. Therefore, the practitioners were required to pay their personal expenses to the intensive training conference.

Using the foregoing criterion, 25 individuals from three school districts and the state department of education in Kansas were recruited to train for the R&D practitioner role. Table 4 presents a summary of the practitioner trainees' demographic characteristics by task-teams.

After evaluating the data presented in Table 4, it is apparent that the criterion of hierarchically differentiated task-teams was fulfilled. In each team upper level and middle level administrators were included and, in Task-Team 2, teachers were also included.

The second selection criterion of recruiting female and minority practitioner trainees was not accomplished at a satisfactory level. Only three females and no ethnic minorities were recruited. Probably so much emphasis was placed on the status structure of the teams by the Project Co-Directors that the school districts were not fully aware of the need for selecting from these sub-populations. In the future, equal emphasis must be placed on these criteria.

The third selection criterion that the practitioner trainees had minimal skills in traditional research skills was reached. All of the trainees had completed at least a masters degree program which included training in research methodology or design.

Table 4

Summary of Practitioner Trainees' Demographic Characteristics

Task Team	Practitioner Trainee	Sex[a]	Ethnic[b] Division	Highest Degree	Years[c] Experience	Present Position
1	1	M	C	M.S.+	3	Asst. Supt., K-12
1	2	M	C	M.S.+	20	Psychologist, K-12
1	3	M	C	M.S.	5	Prin., J.H.S.
1	4	M	C	M.S.+	7	Dir., Data Processing
1	5	M	C	M.S.	21	Vice Prin., H.S.
1	6	M	C	M.S.+	31	Prin., H.S.
1	7	M	C	M.S.	7	Prin., J.H.S.
2	8	M	C	M.S.+	0	Curr. Dir., Elem.
2	9	M	C	M.S.+	8	Prin., Elem.
2	10	M	C	M.S.	3	Prin., Elem.
2	11	F	C	M.S.+	19	Tchr., Elem.
2	12	F	C	M.S.+	22	Tchr., H.S.
3	13	M	C	M.S.+	2	Program Spec.
3	14	M	C	M.S.+	7	Curriculum Dr.
3	15	M	C	M.S.+	7	Program Adm.
3	16	M	C	M.S.+	4	Program Spec.
3	17	F	C	M.S.	5	Program Spec.
4	18	M	C	M.S.+	5	Assc. Prin., H.S.
4	19	M	C	M.S.+	3	Asst. Prin., H.S.
4	20	M	C	M.S.	7	Asst. Prin., J.H.S.
4	21	M	C	M.S.+	6	Prin., Elem.
5	22	M	C	M.S.+	16	Curr. Dir., Sec.
5	23	M	C	M.S.+	18	Voc., Coun., Sec.
5	24	M	C	M.S.+	14	Curr. Coord., Sec.
4 & 5	25	M	C	Ph.D.	1	Cen. Off. Adm., K-12

[a] M--Male; F--Female.
[b] C--Caucasoid.
[c] Years experience in your present organization.

The final selection criterion that a commitment to use the technologies must be demonstrated also was accomplished satisfactorily. The cost for room and board for the intensive conference was $140 per trainee. This expense was paid by the respective school districts.

Data related to the school district itself also must be considered in evaluating the criterion of selecting participants from pressing urban or rural problems. Descriptive data for each school district are presented in Table 5.

Table 5

Descriptive Data for Participating School Districts

Task Team	School District	Staff-Number	Students No.	Students % Minority	Geographic Setting	Adjusted Valuation/ Per Pupil	Rank
1	USD 202 Turner, Ks.	247	5218	2	Rural-Suburban	$8,555	284/311
2	USD 368 Paola, Ks. and	90	1758	8	Rural	13,699	212/311
3	KSDE						
4,5	USD 512 Shawnee Mission, Ks.	2200	45,000	1	Suburban	10,620	251/311

Examining the demographic data summarized in Table 5 reveals that a somewhat diverse group of school districts was selected for pilot testing the content-process training model. The range in district size is one characteristic where marked differences appeared. For example, the second largest, a moderate sized, and a relatively small sized district in Kansas were included in the participating districts. A second source of diversity was the geographic area served by the school district. Rural and suburban school districts were included. However, two of the school districts in Kansas that could be considered "urban" declined to participate in the training project.

Using adjusted valuation per pupil as the criterion, the participating school districts were well below the state median for wealth. The range for this variable in Kansas is from $4,283 to $108,633 with a median of $16,872. The three cooperating districts ranked in the lower 30 percent for wealth. In addition, USD 202, Turner, Kansas had a $8,555 valuation

per pupil which placed it in the lower ten percent in terms of district wealth.

The selection criterion for school districts that was not reached was the inclusion of districts with higher percentages of minority student populations. The range of minority students was from less than 1% to about 8%. Again two districts with the larger minority student enrollments declined to participate.

The foregoing paragraphs have described the inputs or participants in the training program. The following paragraphs describe the throughputs or training activities.

Throughputs

Content Development

During July, 1972 the program developers planned a formal learning experience for one or more of the content skill areas that have been presented previously in Table 1. These materials are summarized in the following pages.

The systems approach. This approach to problem solving was viewed as a modern version of the scientific method, as it might be applied to the problems of large organizations. Therefore, the systems approach is a way of thinking about systems, and cannot be reduced to a set of actions, or rules of thumb to be followed in specific situations.

The systems approach is not so much a new way of thinking about problems as it is a synthesis of "clear" thinking and the scientifically accepted methods of studying problems and formulating solutions. As a method of problem solving, the systems approach is not a theory which can be empirically tested, but an approach which has achieved some success in military applications as well as in industrial applications.

The practitioner is apt to regard the systems approach as a lot of common sense veiled in scientific jargon, and made to look glamorous. However, many foolish decisions made in industry and government provide ample evidence that many decision-makers have taken a narrow view, at best, of their opportunities, and the consequences of alternative courses of action. Further, the responses of class participants to case problems served to illustrate that the systems approach is neither obvious not trivial.

A three phase introduction to the systems approach was used. This consisted of an introductory description of the systems approach, some examples of the systems approach to problems in education, and a discussion of some of the problems being faced by the participants within their own school systems. The latter discussion was designed to start participants thinking in systems analysis terms, which is the conceptual framework that integrates the theories and techniques to be learned throughout the workshop. A topical outline of the presentation follows.

A. Characteristics of the Systems Approach

B. Opponents of the Systems Approach
   1. Free market advocates
   2. Anti-planners
   3. Humanists
   4. The efficiency view of systems

C. Elements of a System
   1. Objective or function of the system
   2. Subobjectives which lead to central objective
   3. Determination of the system environment
   4. Specification of the resources of the system
   5. Delineation of the system's component parts and subsystems
   6. Performance measures for each of the subsystems defined
   7. Management of the system
      a. Goal setting
      b. Adaptive response to feedback

Program planning and budgeting (PPB) may be considered to be a planning methodology which illustrates the systems approach. Following the three phase introduction to the systems approach, a general introduction to PPB served to illustrate and clarify the methodology involved in the systems approach. Moreover, the discussion of the elements of the PPB cycle clarifies a major benefit of using PPB systems. The PPB format forces us to recognize gaps in our knowledge, and thus identifies issues that require research within the educational system.

Reference
(Systems Approach)

Church, C. W. The systems approach. New York: Delta, 1967.

Planning

Educational planning and forecasting using R&D techniques are relatively new. Together they comprised only 5% of the futures research surveyed by John McHale (1970). Delphi (30%) and trend extrapolation (14%) are among the most popular methods used by future researchers. Also they are among the most easily used by school districts to project their immediate needs, problems, and resources. In addition to these techniques, the proposed problems of the district task-teams included curriculum and facilities problems. Consequently, a unit on curriculum planning and facilities planning were added to the content model to meet the specific needs of the practitioner trainees.

Delphi exploration. This planning technique was presented through demonstration, lecture, and discussion methods. The demonstration of the Delphi technique consisted of recirculating a 15 item questionnaire based on a set of state wide goals. The three sets of directions and the 15 items are presented in Table 6. The minority opinions or reasons for maintaining their former positions are summarized in Table 7.

Table 6

The Three Delphi Questionnaires

Delphi Survey #1

STUDY OF GOAL PRIORITIES FOR EDUCATION IN KANSAS

Directions: Each of the 15 statements in this Delphi questionnaire represents a goal or objective that education in Kansas might be expected to achieve during the 1970's. Please rate each statement in terms of how important you feel the goal is for Kansas education. Use the following scale:

5 Very important or essential
4 Of more than average importance
3 Of moderate importance
2 Of little importance
1 Unimportant, not at all essential.

To indicate your rating draw an X through the number corresponding to the rating of your choice; for example, 1, 2, 3, X, 5.

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Delphi Survey #2

STUDY OF GOAL PRIORITIES FOR EDUCATION IN KANSAS

The attached questionnaire is a duplicate of the questionnaire you recently completed. However, on this one, the middle consensus answer of all workshop participants is marked with a black square and your response is marked with a red circle.

Directions: The purpose of this step is to provide you with the following opportunities:

(a) Compare your opinion to the Workshop consensus opinion.
(b) Based on this added information, mark each item again. Please mark your rating with an "X."

The Scale is as follows:

5 Very important or essential
4 Of more than average importance
3 Of moderate importance
2 Of little importance
1 Unimportant, not at all essential.

(c) Where you disagree with the consensus present a written "Minority Opinion" on this form after the item.

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Table 6 continued

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Delphi Survey #3

STUDY OF GOAL PRIORITIES FOR EDUCATION IN KANSAS

Your assistance in bringing us to Questionnaire Number 3, the last in our study is appreciated. The attached questionnaire is a duplicate of the second questionnaire with the middle consensus rating (marked with a black square) and your last response (marked with a red circle).

Attached is a list of "Minority Opinions" for each of the items. This includes the most frequently mentioned reasons why those respondents who differed from the consensus felt as they did.

The purpose of this study is to provide you with the opportunity of rating the items with the knowledge of both consensus rating and the minority opinions. Please mark your ratings with an "X." The scale is as follows:

5 Very important or essential
4 Of more than average importance
3 Of moderate importance
2 Of little importance
1 Unimportant, not at all esential.

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Items Used in the Three Surveys

1. Students should demonstrate, appropriate to their educational level and personal objectives, communication skills which include writing, listening, speaking and reading.
2. A structural program in career awareness to provide on the elementary level cognizance of a wide range of careers in our society and the roles and requirements of the employees in those careers.
3. Nutritious breakfasts and lunches in all schools at a price within the financial means of the students.
4. The Kansas State Department of Education should guide school districts in assessing the need for instruction in values and citizenship and in social relations and should provide necessary directions for workshops and criteria for choosing materials and textbooks.
5. Every student should have planned learning experiences in developing a knowledge of his environment.
6. Every student, both elementary and secondary, should be provided organized learning experiences in one or more of the arts under the guidance of qualified teachers.
7. The feasibility of a centralized educational administrative system for exceptional children should be considered.
8. All teachers preparation programs should be a cooperative effort among colleges and universities, district schools, professional agencies, organizations, and KSDE.
9. Through cooperative action of local educational agencies, the KSDE should define the various duties, levels, uses for the training and utilization of paraprofessionals and teachers aides.
10. The KSDE should be responsible for establishing the methods of planning research, and evaluation in the school districts of Kansas.

Table 6 Continued

11. The KSDE should provide the major coordination and implementation effort of a Management Information System for the Kansas educational system.
12. The KSDE should provide leadership in the development of comprehensive curricula.
13. Needs assessments studies should be accomplished in individual unified school districts in cooperation with and coordinated by the KSDE.
14. All professional teacher training programs should involve the student in classroom experience no later than the sophomore year.
15. All Kansas students should be familiar with methods of scientific inquiry.

Table 7

Minority Opinions in Delphi Demonstration

Question	Opinion
1.	While these objectives are important, they do not include several needed skill areas--social studies, math, etc. that are of equal importance.
2.	A. The time might better be spent on the basic mission of the school system. B. In terms of priority, other things are more important at the elementary level. C. Such a program should be an integral part of any educational system. D. I believe that elementary is too early to push a concentrated career program.
3.	A. Health preceeds learning. B. Not a function of the school. C. My experiences with school breakfasts convince me of its importance. D. Social not educational problem. E. For specific buildings yes, statewide No!
4.	A. These are local issues and must be dealt with at this level rather than imposed from KSDE. B. Local school districts should initiate this action. C. KSDE should not dictate but an overall plan is desirable. D. I still feel that it is a responsibility of KSDE.
5.	A. Kids need to know about their environment. B. This is of prime importance. C. Yes, if the students are involved in the planning. D. Just a matter of degree. I will not change my mind.
6.	A. This is a curriculum decision--part of a total package that cannot be answered independently. B. Arts are not as important as other curricular areas. C. Should be optional. D. Important as we are entering a new era of culture and leisure.
7.	A. Centralized systems are less efficient than local systems. B. We don't know enough about exceptional children to centralize. C. Centralization will give more advantages to children. D. Centralization reflects smaller school needs.

Table 7 Continued

8.	A.	Duplicates existing efforts by other agencies.
	B.	More for local autonomy and diversity.
	C.	Too complex. A single responsible agency is better.
	D.	In my opinion, education needs more diversity not standardization.
9.	A.	Due to the volatile nature of this issue among teacher associations, a cooperative effort is needed.
	B.	This is far from a top priority and I see it as establishing one more set of rules.
	C.	I still feel that this action is necessary and important.
	D.	Let the local group do it.
10.	A.	No one else is in a position to see the total picture.
	B.	This is a district function.
	C.	Strong leadership role--moderate policy-making role.
	D.	Emphatically NO! Suggestions, maybe--but not restrictions.
	E.	Should provide guidelines.
11.	A.	Because of their central position.
	B.	Leadership & direction, only.
	C.	Does KSDE have enough staff & time?
12.	A.	Leadership should assist--not dictate.
	B.	Leadership, only from KSDE.
	C.	KSDE should help.
	D.	KSDE should help if desired by district.
13.	A.	KSDE should provide leadership only.
	B.	Local schools know best what they need!
	C.	An outside agency could be more objective than a local district.
	D.	Task requires too much time and manpower for comprehensive needs assessments.
14.	A.	Can't feel as strongly as some do about this item
	B.	Important, but might be overemphasized and really impossible.
	C.	Perhaps don't understand item, but difficult to see importance of sophomore year experience.
15.	A.	Leave "All" out of statement and I will rate the item stronger.
	B.	Inquiry is basic to all learning.
	C.	Scientific inquiry is important.
	D.	Science is the major thrust in our contemporary culture.

The lecture portion of the demonstration consisted of presenting a historical development and a description of the procedure that had just been completed. Second, a consideration of the Delphi claims, potential uses, and limitations was given. Finally a modified method, the Delphi exploration, was described. An outline of the presentation follows:

A. Introduction
   1. History
      a. Helmer (1966, 1967)
      b. Cyphert and Gant (1970)
   2. Description of Procedure
      a. Structured Interaction Survey
      b. Panel of Experts
      c. Lacks Face-to-Face Confrontation
      d. Re-circulation of Same Survey
      e. Ask for Reasons of Disagreement
      f. Can Revise Opinions Without Treat

B. Delphi Claims
   1. Elicits and refines opinion of group.
   2. Individuals remain anonymous by eliminating the face-to-face confrontations on a panel or committee.
      a. Prevents undue persuasion by strong personalities or positions.
      b. Unwillingness to abandon publicly held positions.
      c. Band wagon effect.
   3. Opinions are continually refined and reiterated.
   4. Produces either group consensus or polarization.

C. Delphi Uses
   1. Forecasting
   2. Long-term Planning, Action, Analysis
   3. Elicit Careful Judgments
   4. Consensus on a Plan of Action
   5. Test Alternative Actions

D. Delphi Limitations
   1. Pools Ignorance
   2. Time Consuming

E. Delphi Exploration
   1. Cycling to the expert panel and to various school publics for estimates of desirability.
   2. School boards, parents, teachers, and taxpayers are consulted to determine how much they are willing to invest in the predictions obtained from experts.
   3. Result is valuable planning information based on expert judgment and local feasibility.

F. Conclusion

The original and modified techniques provide for a conveyance of opinions and their defense, along with defended minority views (Hack, 1971). Ayres (1969) asserted that the strength of the Delphi technique is a balanced forecast in which the best information available has been utilized in a way that no simple model or statistical extrapolation can possibly duplicate.

G. Results of the Delphi Demonstration are summarized in Table 8.

A Discussion of the technique and results followed. All participants in the workshop were included in the discussion.

References
(Delphi Technique)

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Weaver, W. T. Delphi: A critical review. R. R.-7. Syracuse, New York: Educational Policy Research Center, February, 1972.

Weaver, W. T. The delphi forecasting method. Phi Delta Kappan, 1971, 52, 267-271.

Table 8

Results of Delphi Demonstration

Item Number	Response Categories														
	1			2			3			4			5		
	Distribution for Each of the Three Questionnaire Circulations														
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1										9	2	1	27	29	30
2	1	1	1	2	-	-	10	8	5	13	15	19	10	7	6
3	-	-	1	7	2	0	17	20	21	4	2	3	8	7	6
4	5	3	3	5	3	2	11	16	19	6	4	5	9	5	2
5							4	1	-	18	20	22	14	10	9
6				3	-	1	19	3	2	13	22	22	9	6	6
7	1	1	-	5	3	3	11	18	21	10	5	5	6	4	2
8	1	-	-	2	1	1	1	1	-	13	1	2	19	28	28
9	5	2	2	5	2	2	15	17	19	8	8	7	3	2	1
10	6	5	6	9	4	1	9	15	18	8	4	4	3	3	2
11	1	-	-	5	1	1	9	7	5	16	20	23	5	3	2
12	2	1	1	4	3	2	10	3	3	13	20	23	7	4	2
13	1	-	-	3	2	1	7	3	4	12	23	24	13	3	2
14				5	2	2	7	3	3	24	26	25			
15	-	-	1				8	2	2	13	21	22	14	8	7

Trend Projection. The simplest and least expensive method of scientific forecasting is trend projection on charts (Ayres, 1969). In making long-term forecasts, no other device available offers a comparable degree of reliability. The most useful and safest trend to use in most situations is the straight line. It is simplest to fit and easiest to understand. This provides an easy method for a school district to determine the near and far future of its problems, products, and resources. The charts can be kept up to date by secretaries and are always ready for administrative planning and decision making.

An innovation for this program is the use of standard charts, which have been used by basic scientists in trend projection. This is an example of the developers task of simplifying basic research methods for diffusion to the practitioners. The advantages of standard charts are increased charting efficiency with ready and exact comparison of any charts in the district. Time is saved in charting and a less highly trained person can be employed to keep the charts current. In practice, charting costs have been divided by ten.

Since all district problem, procedure, product and cost figures can be charted on the same six-cycle semi-logarithmic grid almost any correlational, comparison, or cost-benefit question can be answered by holding a few charts up to the light or viewing them on a light-board or overhead projector stage. For example, the deceleration in frequency of parental calls to the principals' offices can be compared with the acceleration in pupil performance and deceleration in educational expenditures per pupil. Such comparisons are valuable in cost-effectiveness study following the PPB budgeting model.

Standard projection charts for public school use are possible because, generally speaking, economic series typically grow or decay as straight lines on semi-logarithmic charts. Human behavior frequencies, whether individual, small group, or organizational also accelerate or decelerate as straight lines on semi-logarithmic charts (Lindsley, 1971c).

The six-cycle feature permits a range of dollars or human actions from 1 to 1,000,000 per day or month, depending upon whether short-term or long-term projection is desired. Each 8½ by 11 inch sheet provides room for 140 daylines (20 weeks or one school semester) for short-term projections. If months are used, each sheet covers a period of 10 calendar years for long-term projections.

On semi-logarithmic charts human behavioral frequencies have both homogeneous variance (the up-bounce around the trend line equals the down-bounce) and additive variance (the total bounce is the same no matter what the trend or frequency). This fortunate property of human frequencies simplifies chart comparisons and makes trend projections via straight lines easier and more reliable.

A. Demonstration of technique.

B. Practice with the technique.

References
(Trend Projection)

Ayres, R. U. Technological forecasting and long-range planning. New York: McGraw-Hill, 1969.

(a) Lindsley, O. R. Precision teaching in perspective. Teaching Exceptional Children, 1971, 3, 114-119.

(b) Lindsley, O. R. The beautiful future of school psychology: advising teachers. In M. C. Reynolds (Ed.), Proceedings of the conference on Psychology and the process of schooling in the next decade. Minneapolis, Minnesota: University of Minnesota Audio-Visual Extension, 1971, 116-120.

(c) Lindsley, O. R. Precise behavioral management system. In M. C. Reynolds (Ed.), Proceedings of the conference on Psychology and the process of schooling in the next decade. Minneapolis, Minnesota: University of Minnesota Audio-Visual Extension, 1971, 121-130.

Flowcharting, Program Evaluation and Review Technique (PERT), and Critical Path Method (CPM). For years scientists, engineers, and managers have been using forms of network analysis. An early form or network analysis was developed by Henry Gantt who used a method of charting production activities and processes that resulted in a more orderly form of production. Gantt Charting which uses a time-line bar graph technique had the major limitation of not taking into account the interdependencies of activities and coordinated functions. Flowcharting, with varying degrees of complexity, has been of some use in utilizing major benefits of Gantt Charting while avoiding many of its weaknesses.

In this presentation, major attention was focused on the Program Evaluation and Review Technique (PERT), the Critical Path Method (CPM), and a combined PERT-CPM. The desire to facilitate progress of the research and development contractors working on the Polaris missile project led to the development of PERT. CPM is an outgrowth of efforts, at about the same time, by the Dupont Company and research personnel from Remington Rand--UNIVAC. The basic difference between the two is that CPM tries to predict probabilities for the estimates of job durations, whereas PERT focuses on accurate cost-time function predictions based on experiences, making time estimates relatively certain. With considerable success in the application of these techniques, or methods, increasing numbers of diverse types of organizations have employed PERT, CPM, or PERT-CPM in order to improve both project planning and program operations.

These techniques represent organized planning, reviewing, and evaluation methods for administrators. With networks and simple arithmetic, an administrator can develop a project or program comprising his depiction of the logical sequence of events and activities which permits him to review and evaluate progress at any time. The best way to understand a procedure like PERT-CPM is to utilize it first on a small scale in an unsophisticated manner and to learn by doing. The primary purpose of applying PERT-CPM to an educational project is to create a plan and a schedule that will aid in

organizing the interrelationships of every project component. The administrator can plan the work and work the plan!

A. Flowcharting
   1. Definition: This process is the constructing of a pictorial description of a plan showing the interrelationships of all required events.
   2. Example.

B. Program Evaluation and Review Technique (PERT)
   1. Descriptive Definition
      a. A Methodology for Scheduling Events and Activities Leading to Some Goal and for Assessing Progress Toward that Goal.
      b. Permits More Effective Project Administration by Relating, Managing, and Controlling the Variables of Time, Resources, and Performance.
   2. Applications in Education
      a. Facilities Construction
      b. Budget Preparation
      c. Curriculum Development Project
      d. Grant Proposal Development
      e. Bond Issue Referendums
   3. Example.

C. Critical Path Method (CPM)
   1. Definition: Longest or most time-consuming path through the network. Usually is graphically displayed on the network by a double line.
   2. Example.

D. Definition of Terms
   1. Earliest Expected Date (T_E or t_e) is the earliest date on which an event can be expected to occur. This is the most optimistic time estimate.
   2. Latest Allowable Date (T_L) is the latest date on which an event can occur without delaying the completion of a program. This is the most pessimistic time estimate.
   3. Slack
      a. Difference between T_L and T_E
      b. Can be positive, negative, or zero.
   4. Event is a specific, definable accomplishment which is recognizable at a particular time.
      a. Does not consume time.
      b. Represented by a circle.
   5. Activity is any work effort involving time and resources to complete a task.
      a. Example.
      b. Represented by a line connecting two event circles.
   6. Dummy Activity is a non-time-consuming activity used to illustrate event dependency.
      a. Not descriptive of work.
      b. Example.
      c. Represented by a dashed line.

7. Milestone is a key program event which is essential for the completion of the program.
   a. Example.
   b. Represented by a square or rectangle.

E. PERT-CPM Procedural Steps
1. Identify the projects steps necessary to accomplish the task from the start to the finish.
2. Draw a PERT network by sequencing the events and activities.
3. Make a time estimate for each activity using the following formula.

$$t_e = \frac{a + 4m + b}{6}$$

4. Compute the Project Time Requirement using the following formulas.
   a. $T_E = t_{e1} + t_{e2} + \ldots . t_{en}$
   b. $T_L = T_E - t_{en} - \ldots . t_{e2} - t_{e1}$
5. Identify the Critical Path using the following formula for slack.

$$S = T_L - T_E$$

F. Nothing takes the place of actually working through the process so use PERT and CPM methodologies on the following problem. As an administrator, you have been asked to give a speech to a very important community group regarding a bond issue.
1. PERT your plans.
2. Identify the Critical Path.

G. Advantages of PERT and CPM
1. Project Visibility
   a. Objectives
   b. Relationships among the parts.
   c. Relationships of parts to the goal.
2. Highly accessible method for evaluating progress toward the goal.
3. Forces the identification of events.
4. Forces speculation on time.
5. Asks if the project is feasible.

References
(Flowcharting, PERT, CPM)

Cook, D. L. Program evaluation and review technique: Application in education. Washington D.C.: U.S. Government Printing Office, 1966.

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Granger, Robert L. Educational leadership: An interdisciplinary perspective. Scranton, Pennsylvania: Entext Educational Publishers, 1971.

Haga, J. PERT: What it is, how it works. Journal of Business Education, November, 1965, 72-73.

Tanner, C. Designs for educational planning: A systemic approach. Lexington, Massachusetts: Heath Lexington Books, 1971.

Van Dusseldorp, R. A., et. al. Educational decision-making through operations research. Boston: Allyn and Bacon, Inc., 1971.

Curriculum planning. This presentation emphasized the necessity of using a systematic approach to project and curriculum development. Each stage of two different development models was presented and discussed. A topical outline follows.

A. Model for project development
   1. Needs diagnosis
   2. Developing project goals
   3. Formulating specific objectives
   4. Planning and implementing project
   5. Project evaluation decisions

B. Model for Curriculum Development
   1. Needs Diagnosis - Current Curricular Trends
   2. Develop Goals
   3. Formulate Specific Objectives
   4. Developing Management by Objectives procedures -
   5. Using Objectives to determine programs - I/D/E/A Model Individualizing Instruction
   6. Selecting & Organizing Content
   7. Selecting and Organizing Learning Activities
   8. Curriculum Evaluation

References
(Curriculum Planning)

Beckner, W. and Cornett, J. D. The secondary school curriculum: Content and structure. Scranton: Intext, 1972.

Billett, R. O. Improving the secondary-school curriculum. New York: Atherton Press, 1970.

Kapfer, P. G. and Ovard, G. Preparing and using individualized learning packages for ungraded, continuous progress education. Englewood Cliffs: Educational Technology, 1971.

Taba, H. Curriculum development: Theory and practice. New York: Harcourt Brace & World, 1962.

Trump, J. L. and Miller, D. Secondary school curriculum improvement. Boston: Allyn & Bacon, 1968.

Facilities planning. This presentation emphasized the need for using existing facilities for maximum benefit. Two major planning divisions were presented. A topical outline follows.

A. Building Needs Assessment
   1. Current Educational Program
      Examples include the curricula in math, science, physical education, and language arts.
   2. Services to be rendered
      Examples include food, health, guidance, and transportation.
   3. Policies, Tools, and Technologies

B. Projecting Student Enrollments
   1. Considerations or data sources
      a. birth rate
      b. population trends
      c. new industries
      d. new home construction
      e. non-resident pupils
      f. non-public school enrollments
      g. changes in district boundaries
      h. pupil failure rates
      i. dropout rates
      j. land-use (zoning) changes
   2. Techniques
      a. pre-school census
      b. survival rates
      c. saturation studies
      d. dual projections.

References
(Facilities Planning)

Conrad, M. J. Four step to new schools. Columbus, Ohio: Department of Educational Administration, Ohio State University, undated.

Leggett, S. How to forecast school enrollments years ahead. American School Board Journal, 160, 1973, 25-31.

Programming

Precision classroom teaching and chart acceleration analysis. This content skill area was presented through lecture, demonstration, and active student participation instructional methodologies. In addition, extensive use of audio-visual technologies was made. For example, the instructor simultaneously used special transparent standard frequency charts on four overhead projectors and taperecorded instructional materials. A topical outline of the presentation follows.

A. Historical Development of the Technique

B. Potential Applications in the School
   1. Selecting curriculum
   2. Evaluating progress
   3. Comparing pupil and teacher effectiveness
   4. Improving pupil acceleration

C. Proposed Advantages for Users
   1. One technique can accomplish many objectives
   2. Economical
   3. Accessible for direct comparisons and decisions
   4. Immediate analysis and improvement of instruction

D. Description of the Technique
   1. It is important to emphasize that precision teaching is not an approach. It is an easy, inexpensive system of monitoring daily improvement. Performance is frequency or a dot on the chart. Improvement is acceleration or the slope of lines drawn on the chart.
   2. For most human behavior frequencies, the highest frequency is 2 to 3 times the lowest frequency. Some children have daily frequency bounce as high as 5 to 8 times the lowest frequency. This means more than two points must be used to get an accurate indicator of change or trend. With only two points you could get deceleration by obtaining a high before day and a low after day, when actually the trend through a large number of frequencies would show acceleration or improvement.
   3. Eight to 10 daily frequencies are required to determine an accurate personal trend line (Lindsley, 1971c). Also, if the frequencies are cyclic, an accurate trend can be drawn only if more than two full cycles are covered by the observations. Such cycles are rare in childrens shcool performance, but frequent enough to trouble two-shot change estimates. Cycles are fairly common in certain exceptional children and those with learning disabilities.
   4. Children lose the "test reaction" only when all their performance is counted daily - then it becomes a "work record." Therefore, for these three reasons daily charting of complete frequencies have been found most reliable and economical for measuring childrens acceleration or learning.

E. Audio-Visual Demonstration

F. Practitioner Trainee Practice

References
(Precision Teaching and Chart Acceleration Analysis)

Kunzelmann, H. P., et al. Precision teaching: An initial sequence. Seattle: Special Child Publications, 1970.

Lindsley, O. R. Precision teaching in perspective. Teaching Exceptional Children, 1971, 3, 114-119.

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Lindsley, O. R. Precise behavioral management system. In M. C. Reynolds (Ed.), Proceedings of the conference on Psychology and the process of schooling in the next decade. Minneapolis, Minnesota: University of Minnesota Audio-Visual Extension, 1971, 121-130.

Implementing

Task team. Bennis (1966) and Ross (1962) in industry and Bogue (1971) in education described the use of temporary structures that are developed to attack specific problems with a group of experts who have direct feedback to the top level administrators. The advantages of this concept are loosening the rigidities of the present bureaucratic structure and allowing for rapid problem solving by the most competent individuals in the organization. Clearly, if evaluation is to be effective in modern organizations, the R&D teams must have the skills to build ad hoc or temporary adaptive systems.

Toffler (1970) provides a conceptual rationale for including temporary task teams as a content area for training educational R&D personnel. He asserted that the force of the changing demands on organizations will result in a rapid rise of "task force" or "project" management of one of a kind problems. Havelock (1969) supported Toffler in finding that temporary systems are an integral component in problem solving perspective.

The objective of this content skill area was to design, demonstrate, and implement temporary task teams for solving existing problems in their respective districts. The instructional procedure was to identify a problem in the district, assemble a task team to attend the intensive training program, and develop a problem solving strategy using the other planning and evaluation skills. In other words, the task teams were to use a common sense problem solving model with the following steps: (a) define the overall problem, (b) brain storming sessions, and (c) plan a tentative approach to the problem using the new technologies.

In addition, the diffusion trainees worked with a specific group by acting as a recorder of information and as a link to the developers. The developers were "floaters" among the task-team groups as they were needed.

During the intensive training workshop, the four task teams met nine times. After each meeting, each individual completed a post meeting questionnaire to evaluate the session. These data will be presented later in the report.

In summary, this technique was presented as a learn-by-doing methodology. The diffusion trainees and the developers assisted as needed and each session was evaluated for group effectiveness.

References
(Task-Teams)

Bennis, W. G. Changing organizations. New York: McGraw-Hill, 1966.

Bennis, W. G. Beyond bureaucracy. Trans-Action, 1965, July-August, 31-35.

Bogue, E. G. Disposable organizations. Phi Delta Kappan, 1971, 53, 94-96.

Havelock, R. G. Planning for innovation through dissemination and utilization of knowledge. Ann Arbor: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1969.

Toffler, A. Future shock. New York: Random House, 1970.

Strategies for planned changed. This content area of the training model was conceptualized as being a "laboratory within a laboratory." In other words, the overall laboratory was the Intensive R&D Conference with a group dynamics laboratory operating with it to provide the trainees with insights into their own behavior, the group's behavior, and the fundamentals of planned organizational development. Based on the conceptual and empirical literature, it was reasoned that these insights would better enable the practitioner trainees to implement the new R&D skills more effectively.

Informational lectures, sensitivity training group (T-group) or dialogue groups (D-groups), and structured exercises relating to communication, leadership, and decision-making were used as instructional methodologies. The following training materials were developed for the "lab within a lab."

The lecture on strategies and tactics of planned change was designed to present a working conceptual framework for the practitioner trainees. A topical outline of lecture follows.

A. The Problem
   1. We are all members of some organization (school system) or broader social system (community).
   2. It is one thing to identify a problem and decide upon a solution or to have knowledge of some innovation which should be introduced; it is another thing to actually carry out the solution or introduce the innovation.
   3. There is a developing body of knowledge about the process and dynamics of planning and introducing change and innovation. The person who is given or assumes responsibility for introducing planned change has come to be known as a "change agent."
   4. Bennis, Benne and Chin's book, The Planning of Change, and Harvey Hornstein's new book Social Intervention: A Behavioral Science Approach are two of the best sources on the subject. There are other books which actually describe and

document planned change programs as well as identifying the concepts and principles useful to the agent of change.

5. Thus, one can say that there is developing a body of theory and practice concerning the introduction of planned change.
6. Members of this workshop have spent many hours planning new things for their school districts and schools. Now comes the task of returning to the job situation and carrying out the steps necessary to the effective implementation of the new activities. The strategy and tactics of planned change can be analyzed independently of the content of the change or innovation.

B. Organizational Development as a Special Case

1. Previous research has indicated that "organizational climate" is itself an important intervening variable in the change process; organizations with certain characteristics provide a climate where innovation and change is relatively easy to accomplish while organizations with other characteristics are extremely resistant to change.
2. Research on organizational climate and innovative behavior has indicated that five organizational characteristics are particularly favorable to change and innovation. These five variables are:
   a. Free and open communication among the staff.
   b. Extensive participation in the decision making process.
   c. Higher ups considerate of the feelings of the staff.
   d. Staff free to set their own performance goals.
   e. Organization itself stimulates and encourages innovation and experimentation.
3. A summary of the organizational climate profiles for the three school districts and the state departments are presented in Table 9. In addition, comparative data are presented for the climate profile of 19 business organizations. The six climate items have been significantly correlated with innovative effort in earlier studies. The climate six items are as follows:
   a. Top administration is willing to spend money for management training and development.
   b. Free and open communication among administrators and teachers.
   c. The extent to which administrators and staff participate in decisions which affect them.
   d. The extent that top administrators are considerate of the feelings of people in the organization.
   e. Freedon to set your own performance goals.
   f. Organization stimulates and approves innovation and alternative programming.

   Four response categories were provided for each of the above items. They were scaled from 1 to 4 with the higher number being a more open climate.

Table 9

Organizational Climate Profiles for Organizations Participating in the Conference and Two Comparison Groups

Climate Variable	Mean Responses Groups				
	USD 202	USD 368	USD 512	KSDE	BUSINESS
a	2.6	3.3	3.4	3.4	3.7
b	3.0	3.0	3.1	2.6	3.0
c	3.0	2.9	3.1	2.4	3.0
d	2.8	2.6	3.4	2.4	3.1
e	3.9	4.0	3.6	3.3	3.4
f	2.6	3.4	3.9	2.4	3.2

4. Discussion and analysis of comparative climate profiles.
5. If a person or group was planning to introduce planned change or innovations of one kind or another into an organizational setting, it might be established that the first step would be to engage in a program of planned change in the organizational climate itself. This would prepare the organization for becoming more innovative and adaptive. Thus the goal of change is a change in the character of the organization.
6. The planning and carrying out of planned changes in the climate and character of organizations themselves has come to be known as the field of "organizational development" or "OD" for short. There is a growing body of literature of practical value to the working administrator in this field of activity.
7. An organization which wanted to make itself a more benevolent place for innovation and change would want to engage in activities which would lead to the following objectives:
   a. achieving more free and open communication among staff,
   b. involving a wider range of more people in more and more decisions,
   c. increased sensitivity on the part of the top administrators to the feelings of others,
   d. increased freedom in setting personal performance goals, and
   e. increased recognition and reward for innovation and experimentation.
8. A variety of strategies have been developed for achieving these kinds of changes in organizations:

a. Survey-Feedback Model. A questionnaire survey of the staff attitudes and opinions and perceptions about the organization is carried out. A series of meetings and conferences starting with the top of the organization and working down through levels are held to discuss, analyze and "problem-solve" on the basis of problems identified in the data. Follow-action is planned and carried out toward the objectives specified. The "organizational change exercise" carried out during the course of this workshop was an illustration of the survey-feedback or self-study approach to change (Described later in report).

b. Laboratory Training-Organizational Development Model. As a part of a general plan, a sub- set of the members of an organization are sent to human relations training where they learn skills in openness, participation, sensitivity, goal setting, etc. Then concurrently or subsequently an internal development program involving action, feedback, diagnosis and change is carried out.

c. Conventional Administrator - Staff Intervention Model. The central administration of an organization working with its specialized staff design and carry out through routine channels of administrative action the changes and innovations desired.
   (1) As is well-known, many changes administered in this manner are not as successful as originally conceived.
   (2) This conventional model implies, of course, that the need for change is identified and understood at the top of the organization and that the initiator of change is in a position of major responsibility.
   (3) One can identify many different tactics by which administration initiated change may be accomplished.

d. Data-Based Intervention Model. This is essentially the rational-scientific strategy of change. One does a study and obtains some findings or someone else does a study and has some findings, e.g. the original research findings on flouridation and dental carries, and then presents these findings as evidence for the change or innovation to be achieved.
   (1) As is well-known, rational or data-based change efforts do not always lead to successful innovation.
   (2) This change model typically is identified with specialized change agent groups, commissions, consultants, experts and public groups formed around them. Consultants and experts may develop tactics which are more or less successful in the implementation of change.
   (3) The institutionalization of the innovative process is medicine and agriculture provides a model for data-based strategies. This model is present in a more rudimentary manner in education although the educational establishment does not share the amount of public trust involved in agricultural and medical diffusion.

(4) A critical problem in modern society is the development new institutional means by which new scientific knowledge in the social and behavioral sciences can get applied in organizations, communities and personal life settings.

e. Violence and Coercion Intervention Model.

(1) Administrative and data-based strategies of change are primarily of use only to the established agencies in society.

(2) The need for change and innovation may originate among the powerless in both organizations and communities.

(3) The United States was founded on the basis of a violent revolution.

(4) The labor movement in Europe and the U.S. could never have achieved the reforms and changes accomplished by it without the use of violence and coercion as strategies of change.

(5) Evidence presented by Astin his studies of American college campuses indicate that students and blacks gained more in reform and the redress of grievances on those campuses in which the most confrontation and violent strategies were used.

(6) Substantial changes have come about through non-violent civil disobedience and other such coercive strategies of change.

(7) Thus, persons in low-power positions in organizations should consider alternative strategies to rational and data-based strategies when these means are failing. The costs and benefits of coercive strategies of change can be rationally weighed by the proponents of change. Resistance is, of course, to be expected.

(8) Alinsky provides one model for the achievement of community reforms. Certainly such a model could be applied within the public school system by persons frustrated with the failure of more rational-democratic change attempts.

(9) Confrontation tactics such as the sit-in, strike, slow-down or gherao (capture and holding of administrators) are often useful.

(10) Violence may be used for social change as well as for social control.

(11) Violence and coercion as strategies of change are, of course, used by the legitimate authorities as well as by the powerless. It is possible to conceive of situations in which the potential benefits of some innovation or change are sufficient to outweigh the costs of the use of coercion in the intervention process.

(12) Politics and values are highly involved in all of these issues surrounding the use "unsanctioned" means of achieving change.

C. Discussion of all workshop participants followed.

Dialogue groups (D-groups): These stranger groups were formed to provide the basic learning experiences in interpersonal and group skills. These groups were composed of six or seven members free to discuss any subject, including interpersonal problems, and to give feedback to others concerning reactions and feelings.

The theoretical basis of the method is that, in learning about one's own behavior and the behavior of others in a "here and now" situation, dysfunctional attitudes and behaviors may become unfrozen and new and more effective behaviors and attitudes explored. The learning situation is one where, in a climate of support and trust, each individual may receive direct feedback on the effects of his behavior on others with whom his is interacting. Exercises to facilitate interpersonal inquiry and self-disclosure for learning in D-groups were developed and used. The methods used are described in the following paragraphs.

A. D-group Formation. The developer trainers for this content area instructed the conference participants to form duets with a person with whom they were not acquainted and discuss areas of interest for ten minutes. The next step was the formation of quartets by merging two duets. Again the participants were instructed to merge with strangers and discuss topic of interest for 20 minutes. The third step in the D-group formation exercise was the merger of the quartets into octets. The instructions again indicated that strangers should compose the groups. If a group had a person that was another person's immediate superior in their school district, the individuals changed groups. The four groups of six and seven then discussed topics of interest for 30 minutes. The first result of this exercise was the formation of groups composed of strangers or, if acquainted, peers. The second result was an introduction and one hour discussion with other workshop participants.

B. Resource Management Exercise. Four decks of playing cards were assembled and randomly distributed into four new decks. Each D-group was given a deck of cards and instructed to select one person from their group to act as an observer. The D-groups were in one room and instructed that four complete decks of playing cards was distributed among the groups. The object of the exercise was to assemble complete decks of playing cards within each group. The observers were given the guide reproduced in Table 10.
   1. After the exercise the observer gave a report to his group. Then reports were given to the total laboratory for a general sharing of insights and observations.
   2. This exercise demonstrated the concepts of producing and implementing a plan of action to accomplish a particular goal. The use of an observer gave the participants feedback relating to their actions and increased their awareness of the effects such actions have in problem solving situation.

C. Double Cluster Exercise. The purpose of this exercise was to assist each participant achieve personal growth goals and to

introduce the concepts of group task and maintenance roles. The first part was the completion of the two instruments, presented in Table 11, by each practitioner trainee.

1. After completing these two forms, the D-groups designated A and D formed one cluster and B and C formed a second cluster. A fish bowl procedure with one cluster in the center of a circle formed by the second was used. The group in the center is asked to discuss the data from the Interpersonal Self Assessment and Goal-Setting forms. While the other group observes. The guide to observing group behavior is summarized in Table 12. It was provided for each trainee.
2. After 45 minutes, the cluster groups switched roles and the fish bowl procedures continued for an additional 45 minutes. The clusters then merged and shared process feeback on individuals and groups. The developer emphasized the relevance of "here and now" behavior to growth goals in a short lecture.

Table 10

Observer Guide for Resource Management Exercise

Suggested questions for observers.

1. How did your group go about selecting a strategy?
   Who had the most influence?
   How was disagreement handled?
   What assumptions were people making about the nature of the task?

2. Did you observe any inter-group interactions during the planning phase? If so, what were they and how did you interpret?

3. In the end, what organizational form and strategy were chosen by your group for the main part of the exercise?

4. What effect did your group's strategy have on the strategy and organization of the other groups?

5. Once the resources (decks of cards) were distributed, how did things work out for your group? How do you explain or interpret the events?

6. What did you observe going on in the total group during the action Phase of the exercise? What events seemed to have the greatest influence on the outcome? Which people seemed to be most influential?

7. Considering the exercise as a whole what were the things you liked best (the strengths) about the way in which your group functioned?

8. Considering the exercise as a whole, what were the things that you least (the weaknesses) in the way your group functioned?

9. What are the major insights or interpretations which you gained from what you have observed throughout the evening?

10. About planning?
    About resource management?
    About inter-group relations?
    About human behavior generally?

11. Any other thoughts or feelings?

Table 11

Interpersonal Self-Assessment and Goal Setting Questionnaires

INTERPERSONAL SELF-ASSESSMENT

Each of us spends considerable time engaged in interpersonal interactions whether they be in work situations, leisure time, social situations, etc. Take some time to reflect upon those interpersonal situations in which you are often involved.

Now, try to identify those interpersonal behaviors which you think you handle very well, i.e., identify your strengths in the area of interpersonal relations. Write those behaviors in the left-hand column below.

Also, try to identify those aspects of your interpersonal behavior which you think could be improved upon and write those behaviors in the right-hand column below.

Interpersonal Strengths	Areas for Improvement

INTERPERSONAL GOAL-SETTING

Based upon the above list, develop some specific goals about your interpersonal behavior which you would like to achieve during the remainder of the workshop. List these goals in the left-hand column.

Try to identify ways in which you can achieve these goals. In so doing be as specific as you can as to the behaviors which you can implement which would be working toward those goals. List those goal-directed behaviors in the right-hand column. After you have listed the goals and behaviors, place a check by the goal which is of most importance to you at this point.

GOALS	BEHAVIORS

Table 12

WHAT TO OBSERVE IN A GROUP

One way to learn in a training laboratory is to observe and analyze what is happening in one's D-Group. All of us have spent our lives in groups of various sorts--the family, gang, team, work group, etc., but rarely have we taken the time to stop and observe what was going on in the group, or why the members were behaving the way they were. One of our main goals here is to become better observers and better participants.

But what do we look for? What is there to see in a group?

CONTENT VS. PROCESS

When we observe what the group is talking about, we are focusing on the content. When we try to observe how the group is handling its communication, i.e., who talks how much or who talks to whom, we are focusing on group process.

Most topics about the back-home situation emphasize the content - "what is good leadership," "how can I motivate my subordinate" "how can we make meetings more effective." They concern issues which are "there and then" in the sense of being abstract, future- or past-oriented, and not involving us directly. In focusing on group process, we are looking at what our group is doing in the "here and now," how it is working in the sense of its present procedures and organization.

In fact, the content of the conversation is often the best clue as to what process issue may be on people's minds when they find it difficult to confront the issue directly. For example:

Content	Process
1. Talking about problems of authority back home may mean	that there is a leadership struggle going on in the D-Group
2. Talking about how bad group meetings usually are at the plant may mean	that members are dissatisfied with the performance of their own D-Group
3. Talking about staff men who don't really help anybody may mean	dissatisfaction with the trainer's role in the group.

At a simpler level, looking at process really means to focus on what is going on in the group and trying to understand it in terms of other things that have gone on in the group.

COMMUNICATION

One of the easiest aspects of group process to observe is the pattern of communication:

1. Who talks? For how long? How often?
2. Whom do people look at when they talk?

a. Single others, possibly potential supporters
b. The group
c. No one.

3. Who talks after whom, or who interrupts whom?
4. What style of communication is used (assertions, questions, tone of voice, gestures, etc.)?

The kinds of observations we make give us clues to other important things which may be going on in the group, such as who leads whom or who influences whom.

DECISION-MAKING PROCEDURES

Whether we are aware of it or not, groups are making decisions all the time, some of them consciously and in reference to the major tasks at hand, some of them without much awareness and in reference to group procedures or standards of operation. It is important to observe how decisions are made in a group in order to assess the appropriateness of the decision to the matter being decided on, and in order to assess whether the consequences of given methods are really what the group members bargained for.

Group decisions are notoriously hard to undo. When someone says, "Well, we decided to do it, didn't we?" any budding opposition is quickly immobilized. We can only undo the decision if we reconstruct it and understand how we made it and test whether this method was appropriate or not.

Some methods by which groups make decisions:

1. The Plop: "I think we should introduce ourselves" . . . silence.
2. The Self-Authorized Agenda: "I think we should introduce ourselves, my name is Joe Smith . . ."
3. The Handclasp: "I wonder if it would be helpful if we introduced ourselves?" "I think it would, my name is Pete Jones. . . ."
4. "Does anyone object?" or "we all agree."
5. Majority-Minority voting.
6. Polling: "Let's see where everyone stands, what do you think?"
7. Consensus Testing: Genuine exploration to test for opposition and to determine whether opposition feels strongly enough not to be willing to implement decision; not necessarily unamimity, but essential agreement by all.

TASK - MAINTENANCE - SELF-ORIENTED BEHAVIOR

Behavior in the group can be viewed from the point of view of what its purpose or function seems to be. When a member says something, is he primarily meeting some personal need or goal without regard to the group's problems (self-oriented)?

As the group grows and member needs become integrated with group goals, there will be less self-oriented behavior and more task or maintenance behavior. What kinds of categories can we identify?

Types of behavior relevant to the group's fulfillment of its task:

1. Initiating: Proposing tasks or goals; defining a group problem; suggesting a procedure or ideas for solving a problem . . .
2. Seeking information or opinions: Requesting facts; seeking relevant information about group concern; asking for expressions of value; seeking suggestions and ideas . . .
3. Giving information or opinion: Offering facts; providing relevant information about group concern . . .
   Stating a belief about a matter before the group; giving suggestions and ideas . . .

Table 12 Continued

4. Clarifying and Elaborating: Interpreting ideas or suggestions; clearing up of confusions; defining terms; indicating alternatives and issues before the group . . .
5. Summarizing: Pulling together related ideas; restating suggestions after the group has discussed them; offering a decision or conclusion for the group to accept or reject . . .
6. Consensus Testing: Asking to see if group is nearing a decision; sending up trial balloon to test a possible conclusion . . .

Types of behavior relevant to the group's remaining in good working order, having a good climate for task work, and good relationships which permit maximum use of member resources, i.e., group maintenance:

1. Harmonizing: Attempting to reconcile disagreements; reducing tension; getting people to explore differences . . .
2. Gate Keeping: Helping to keep communication channels open; facilitating the participation of others; suggesting procedures that permit sharing remarks . . .
3. Encouraging: Being friendly, warm, and responsive to others; indicating by facial expression or remark the acceptance of others' contributions . . .
4. Compromising: When own idea or status is involved in a conflict, offering a compromise which yields status; admitting error; modifying in interest of group cohesion or growth . . .
5. Standard Setting and Testing: Testing whether group is satisfied with its procedures or suggesting procedures; pointing out explicit or implicit norms which have been set to make them available for testing . . .

Every group needs both kinds of behavior and needs to work out an adequate balance of task and maintenance activities.

Emotional Issues; Causes of Self-Oriented, Emotional Behavior

The processes described so far deal with the group's attempts to work, to solve problems of task and maintenance, but there are many forces active in groups which disturb work, which represent a kind of emotional underworld or under-current in the stream of group life. These underlying emotional issues produce a variety of emotional behaviors which interfere with or are destructive of effective group functioning. They cannot be ignored or wished away, however. Rather, they must be recognized, their causes must be understood, and as the group develops, conditions must be created which permit these same emotional energies to be channeled in the direction of group effort.

What are these issues or basic causes?

1. The problem of identity: Who am I in this group? Where do I fit in? What kind of behavior is acceptable here?
2. The problem of goals and needs: What do I want from the group? Can the group goals be made consistent with my goals? What have I to offer the group?
3. The problem of power, control, and influence: Who will control what we do? How much power and influence do I have?
4. The problem of intimacy: How close will we get to each other? How personal? How much can we trust each other and how can we achieve a greater level or trust?

Table 12 Continued

What kinds of behaviors are produced in response to these problems?

1. Dependency-counterdependency: Leaning on or resisting anyone in the group who represents authority, especially the trainer.
2. Fighting and Controlling: Asserting personal dominance, attempting to get own way regardless of others.
3. Withdrawing: Trying to remove the sources of uncomfortable feelings by psychologically leaving the group.
4. Pairing up: Seeking out one or two supporters and forming a kind of emotional subgroup in which the members protect and support each other.

D. Power and Decision-Making Exercise. This exercise was an adoption Hall's (1971) NASA exercise. Each participant was asked to contribute 25 cents to a prize for the winners of the exercise. Next the participants were given the handouts labeled A and B in Table 13. Using the form entitled Part C in Table 14, each group computed three scores by summing the discrepancies between the correct rank-order (Column D) and the three rank orders already written on the note sheets: (a) the rank-order obtained through consensus (Column C), (b) the average rank-order of the group before discussion (Column B, and (c) the individual private rank-order that came closest to the teacher sample (criterion) rank order. Each of the D-groups then said whether its "best" individual, its averaged product before discussion, or its consensual product was superior.

After the participants had inspected the charts and had discussed them informally for a few minutes, the developer (trainer) reminded them of the prize. As a total laboratory they were to divide the prize among the groups and then as D-groups divide the prize among the individuals. However, no two groups or individuals could receive an equal amount but all had to receive some amount. The exercise was then discussed.

Table 13

WHAT'S IMPORTANT TO TEACHERS EXERCISE

Part A

A recent survey of all the teachers (500) in a small Midwestern community identified those aspects of teaching which were considered to be important. The following list of characteristics is representative of those frequently noted by the teachers.

Your task is to rank these items in order of the frequency with which they were selected as being "important" to the teachers surveyed. Put a "1" beside the item which you think was picked most often, a "2" beside the second most often, . . . and a "10" beside the tenth most often. There were also other items frequently mentioned which are not on this list.

Survey Item	Rank
a. How I am evaluated	_____
b. Take-home pay	_____
c. Facilities in the building	_____
d. How well the teacher work together	_____
e. The confidence students have in me	_____
f. The security of my position	_____
g. Having challenging and interesting lessons	_____
h. The system's treatment of teachers	_____
i. How I get along with my supervisors	_____
j. The amount of responsibility in my position	_____

The third step was giving the following handout to the participants.

-- --

Part B

INSTRUCTIONS FOR CONSENSUS

Group-Decision Instructions

Consensus is a decision process for making full use of available resources and for resolving conflicts creatively. Consensus is difficult to reach, so not every ranking will meet with everyone's complete approval. Complete unanimity is not the goal - it is rarely achieved. But each individual should be able to accept the group rankings on the basis of logic and feasibility. When all group members feel this way, you have reached consensus as defined here, and the judgment may be entered as a group decision. This means, in effect, that a single person can block the group if he thinks it necessary; at the same time, he should use this option in the best sense of reciprocity. Here are some guidelines to use in achieving consensus:

Table 13 Continued

1. Avoid arguing for your own rankings. Present your position as lucidly and logically as possible, but listen to the other members' reactions and consider them carefully before you press your point.
2. Do not assume that someone must win and someone must lose when discussion reaches a stalemate. Instead, look for the next-most-acceptable alternative for all parties.
3. Do not change your mind simply to avoid conflict and to reach agreement and harmony. When agreement seems to come too quickly and easily, be suspicious. Explore the reasons and be sure everyone accepts the solution for basically similar or complementary reasons. Yield only to positions that have objective and logically sound foundations.
4. Avoid conflict-reducing techniques such as majority vote, averages, coin-flips and bargaining. When a dissenting member finally agrees, don't feel that he must be rewarded by having his own way on some later point.
5. Differences of opinion are natural and expected. Seek them out and try to involve everyone in the decision process. Disagreements can help the group's decision because with a wide range of information and opinions, there is a greater chance that the group will hit upon more adequate solutions.

What is the group consensus? Place the number 1 by the item that the group thinks was ranked most important by the teacher sample; place the number 2 by the second most important item, and so on through the number 10, which is the group consensus estimate of the least important of the 10 items.

Survey Item	Rank
a. How I am evaluated	_____
b. Take-home pay	_____
c. Facilities in the building	_____
d. How well the teachers work together	_____
e. The confidence students have in me	_____
f. The security of my position	_____
g. Having challenging and interesting lessons	_____
h. The system's treatment of the teachers	_____
i. How I get along with my supervisors	_____
j. The amount of responsibility in my position	_____

Table 14

Summary Chart for Power and Decision-Making Exercise

	Individual Rankings										
Item	1	2	3	4	5	6	A*	B	C	D	E
a										6	
b										4	
c										8	
d										1	
e										5	
f										10	
g										3	
h										2	
i										7	
j										9	

*A--Sums of Individual Rankings
B--Rankings of Sums
C--Consensual Rankings
D--Teacher Ranking (Criterion)
E, E, E--Discrepancy between indicidual rankings, rankings of sums, and consensual rankings.

E. Applied Change Exercise. The D-groups were given the following instructions. This afternoon is a real life learning experience in the dynamics of planned change. You are to actually identify ways in which you would like to see the program of this workshop changed. The goal of this change is to maximize your personal and/or task-team benefit from the remaining time. Schedule for the afternoon.

1:00 - 1:30	Each D-Group decide on change objective to maximize benefit.
1:30 - 1:55	Each D-Group plan strategy for getting change successfully adopted.
1:55 - 2:05	Break
2:05 - Completion	Each D-Group carry out its program for change. End product will be a redesigned workshop program.
After Completion -	½ hour of sharing and discussion of the experience, strategies of planned change, and implications for introducing change "back home."

Then carry out the redesigned workshop plan.

F. D-Group Sessions. These were informal sessions where the trainees could discuss their perceptions in a low threat stranger group with a human relations trainer. To assist the discussion in these D-Group sessions of the interpersonal problems that were occurring in hierarchically differentiated task-teams, an anonymous form called "Interpersonal Feedback" was made available to the trainees. The trainees were encouraged to complete them in relationship to problems and give them to a developer in human relations. These were then discussed in these D-group sessions. The form is presented in Table 15. In addition, a second form was used in conjunction with the D-Group sessions.
Feedback from the D-Groups for developer information was provided by the "Group Process Data Collection Sheet." This form was collected after each session and consisted of five items. The five items are found in Table 16.

Table 15

Questionnaires for D-Group Sessions

Interpersonal Feedback Form

Name	Behaviors: Helps	Behaviors: Hinders
1. _____ Suggestions:		
2. _____ Suggestions:		

Group Process Data Collection Sheet

1. How satisfied are you with the way things are going in this group as of this time?

   ( ) Very dissatisfied
   ( ) Somewhat dissatisfied
   ( ) Slightly more dissatisfied than satisfied
   ( ) Slightly more satisfied than dissatisfied
   ( ) Fairly satisfied
   ( ) Very satisfied

2. What are the things that you like the most about the way things are going in your group?

3. What are the things that you like the least about the way things are going in your group?

4. What suggestions do you have for how you would like to see things changed in order that the group could function more effectively?

5. Other comments or observations about your feelings as of this moment?

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Budgeting

Cost-effectiveness analysis. The market portion of the national economy has been studied in great detail for many years. Although the economic system is large and complex, the structure of our economy is well understood. However, the process by which resources are allocated in the government and education is not well understood. Furthermore, few theories about how resources should be allocated to achieve our objectives have been developed. The assumption was made that many of the economic concepts developed in the private sector could have appliability in educational

decision-making. Consequently, this content area was developed to provide the basic information necessary to goal orient the resource allocation process in educational organizations.

This content area was presented with the following instructional methodologies: A lecture segment, and example - discussion segment, and an application segment in which the concept was considered in relationship to the problems brought to the workshop by the R&D practitioner trainees. A topical outline of this content area follows.

A. Introduction
   1. In the private sector, most transactions are made on a quick pro quo basis.
   2. In the public sector, the benefits are separated from the payments. Consequently, individuals have difficulty weighing the costs and the benefits of transactions in public sectors such as education. Reasons for this would include the following:
      a. Benefits from school activities are remote from some of the people receiving benefits, either in time, space or comprehensibility.
      b. By its nature, preventative action results in hidden benefits.
      c. The benefits of education are uncertain. Thus, many benefits are discounted heavily by doubters.
      d. Since schools must deal with factors affecting the community as a whole, it faces much more complex problems than are faced by individuals.

B. The need for political action in the school funding process creates many problems that are further complicated by cost-benefit measurement problems.
   1. Public financing is essentially a coercive process in which revenue (a cost to society) is obtained by force of law, not by the quantity of service rendered.
   2. Every individual in a heterogeneous population can find <u>some</u> expenditure that is against his desires. Thus, he would rather have use of that money himself, or have it used in another program that is valued by him.
   3. <u>Hypothesis</u>: Every citizen believes that the actual government budget (school budget) is too large in relation to the benefits he himself is deriving from it.
   4. Consequence: A lower budget than would exist if citizens were aware of the costs and benefits of unfunded programs.

C. Solutions
   1. Improve accountability
   2. Improve performance measures
   3. Improve process measures that are probably related to performance.
   4. Consumer research, advertising

D. Cost-effectiveness analysis is simply the process of relating the cost of some set of activities to the benefits derived from these

activities. Benefits are measured in terms of increased effectiveness.

1. Uses of cost-effectiveness analysis
   a. Resource allocation decisions (planning)
      (1) activities
      (2) programs
   b. Evaluation of the effectiveness of programs for internal use
   c. Stewardship reporting to external parties
   d. Evaluation of the performance of individuals
2. Five major steps sometimes associated with cost effectiveness analysis
   a. Set an objective or an index of performance that is a function of several performance measures. Effectiveness is a measure of the extent to which an objective is achieved. Thus, the desired behavior or result must be pinpointed.
      (1) process objectives
      (2) performance objectives
   b. Search out and specify alternatives (brainstorm, delphi, projections by those in environment, etc.).
   c. Determine the extent to which each alternative contributes to the desired objective. This step implies some model that links activities to accomplishment, and programs to effectiveness.
   d. Determine the cost of each program for desired levels of accomplishment, or given a fixed budget, determine the levels of accomplishment that can be achieved from a given budget.
   e. Based on some decision-rule, select a "best" program. The decision rule is just a way of selecting from among alternatives.
   f. Evaluation-Compare actual costs with expected costs, and actual effectiveness with expected effectiveness.
   g. Adopt and revise programs

E. Cost-Benefit analysis is the process of relating the cost of a program or a set of activities to the benefits derived from these activities.
   1. Uses of cost-benefit analysis (CBE)
      a. Resource allocation decisions.
         (1) activities
         (2) programs
      b. Evaluation of the effectiveness of programs & activities
      c. Stewardship reporting
      d. Evaluation of the performance of individuals
   2. Major steps in CBE - The steps are the steps used in cost-effectiveness analysis, except:
      a. Benefits are measured in terms of the monetary value of outputs.

b. CBE is a measure of economic efficiency since the dollar measure of inputs (cost) is compared with the dollar value of outputs (benefits).

Concepts	Examples
Input / output	Costly student
Benefits - Cost	Net earnings, net cash flow, --
(Benefits - Cost) / (Investment)	return on investment

F. The need for cost-benefit analysis leads to the problem of defining costing and the concept of cost.
1. Costing is the process of estimating the cost of doing something. The stress is on the doing, not the results.
   a. The objects of costing are always sets of activities.
   b. Structural Diagram:

Inputs (Costs)	Activities (Process)	Outputs (Performance)
I_1	A.	O.
From Environment — I_2		To Environment
I_3	A_2	O_2
I_4		O_3

2. Cost Defined: Cost is a sacrifice; a measurable cost is the relinguishment of a measurable resource or the creation of a measurable liability (obligation to pay).
3. Major Ways of Classifying Costs:
   a. Behavior with respect to the volume of activity.
   b. Controllability
   c. Causation
      (1) Policies
      (2) Activities
      (3) Decisions about quality of service.
   d. Traceability
      (1) Direct Costs
      (2) Indirect Costs
   e. Functional Areas
      (1) Administration
      (2) Instruction
      (3) Maintenance
4. Factors Affecting Cost Controllability
   a. legally binding contracts
   b. quasi-legal commitments
   c. constraints imposed by higher levels of management
   d. minimum levels of service that are required by the environment or top management.

e. technical characteristics of the input - output relationship (i.e., the production function that relates inputs to outputs.

G. Example of Cost-Benefit Analysis--Discounting

One problem in cost-benefit analysis is that cost is time dependent. A dollar today is worth more than a dollar tomorrow.

1. Question - If money costs 6% per year, should I invest $10,000 today in order to receive $11,236 at the end of two years?

Original Loan	$10,000	
First year's interest	600	6% of $10,000
Debt at end of year 1	10,600	
2nd year's interest	636	6% of $10,600
Debt at end of year 2	$11,236	

Value of Benefits - Cost = Net Benefits
$11,236 - $11,236 = 0

2. Question - If a project costs $10,000, but will return $11,236 at the end of two years, what is the annual rate of return?

Answer - 6% per year.

3. Question - If a project cost $1,000, how long will it take to recover my investment if I borrow money at 8% per year. Assume that the "benefits" are valued at $300 per year, at the end of each year?

Year	Investment	Interest	Benefit	Balance
1	$1,000	$80.00	$300	$780
2	780	64.40	300	544.40
3	544.40	43.55	300	287.95
4	287.95	23.04	300	10.99

H. Applications to Practitioner Trainee Problems

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Evaluation

Review of program evaluation methodologies. This content area was presented through a formal lecture-discussion teaching method and individual consulting between the task-teams and the program developer. A topical outline of the lecture-discussion presentation follows.

A. Introduction
   1. Before proceeding with a consideration of how an administrator or teacher can appraise an educational program, two concepts must be clearly understood.
      a. Evaluation process--Three parts
         (1) the identification of those procedures which are necessary for determining the merit of an educational program;
         (2) the data collection stage consisting of specified measurement procedures;
         (3) the decision-making stage based on value judgments of what is "good."
      b. Educational program
         (1) Any set of organized activities aimed at accomplishing organizational goals.
         (2) Should not be too narrow in defining educational programs. Those programs identified at the classroom level are primarily instructional or curricular in nature.
         (3) Examples of other educational programs: inservice, transportation, building maintenance, food service.

B. Two Current Models of Program Evaluation
   1. Summative Model
      a. Emphasizes only the evaluation of end products.
      b. Assessment is made at the end of a project.
   2. Formative Model
      a. Emphasizes continuous assessment for the program's duration.
      b. In addition to a summative evaluation, periodic evaluation for feedback during the program's operation takes place.

C. Common Steps in Both Models
   1. Specification of intended outcomes
      a. Goals: general in nature.
      b. Objectives: specific in nature with an action verb which identifies a particular behavior to be exhibited.
      c. Types: product, process, cognitive, affective, psyclio-notor.
      d. Examples of and practice in writing goals and objectives.
   2. Identification of groups affected by the program.
   3. Identification of the type of data to be collected, the measurement procedures, and the data collection instruments.
      a. Norm-referenced and criterion referenced measurement approached for cognitive goals.
      b. Self-report measures for affective outcomes.
      c. Item sampling.
   4. Specification of data analysis methods.
   5. Specification of the Criterion Level.

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Chart acceleration analysis. This evaluation methodology was presented in conjunction with the precision teaching content area. Consequently, a description of this technique has been described earlier in this report.

Orientation of Diffusion Trainees

Due to the proposed level of financial support, the five R&D diffuser trainees were not placed on stipend until July 16, 1972. This only allowed a two week period before the Intensive Training Conference was to begin. However, the following training meetings were held: a general session with the co-directors, five sessions on the charting methodologies, two sessions on budgeting techniques, and six sessions on change strategies. These meetings focused on the activities that were being planned for the Intensive Training Conference.

A weakness in these orientation sessions for the diffuser trainees was a focus on the specific activities for the scheduled conference. A better training strategy probably would have been to take the time to develop a basic understanding of the theoretical foundations of the proposed techniques. Consequently, an intensive orientation period of six weeks appears to be necessary to prepare the diffuser trainees for assisting the R&D practitioner trainees during the intensive conference.

Intensive Training Conference

School districts were notified of the R&D project and were invited to participate. Districts expressing an interest were visited by a co-director and another development team member. During these meetings, the project goals, content, and processes were explained. Meetings were held with the Kansas City, Missouri district, the Kansas State Department of Education, and the following Kansas districts: Kansas City, Newton, Paola, Shawnee Mission, and Wichita. If the districts indicated a willingness to participate, additional planning sessions were scheduled to assist in defining the district problems which were to be the focus during the intensive training conference.

Three Kansas school districts and the Kansas State Department of Education elected to participate in the R&D project. The Shawnee Mission School District, USD 512, elected to send two teams of administrators. One team was to focus upon the development of a K-12 career education program. The second team was to plan, develop, and implement a program for articulating, coordinating, and evaluating 11 elementary schools, two junior high schools; and one high school in the northwest section of the district. Turner School District, USD 202, sent seven administrators to develop a program to improve teacher morale and the morale and achievement of the student body in the secondary schools. Paola School District, USD 368, had a five member team attend the workshop to develop a program for assessment of curriculum needs. In addition, the Kansas State Department of Education elected to involve six staff members to assist the Paola task-team because the district had been chosen as a Kansas renewal district.

The Intensive Training Conference was held at the Ramada Inn in Lawrence, Kansas for the nine days of 1-10 August, 1972. This workshop included 27 practitioner trainees, five diffuser trainees, and nine program developers living in a modified laboratory or retreat setting for the nine days. In other words, the trainees lived at the training site and ate all meals together while the developers spent 10 hours per day in formal learning activities and ate two meals with the trainees.

The conference design of a "lab within a lab" training program in human relations and group dynamics provided continuous inprocess feedback for evaluation. All participants observed themselves and each other as they proceeded through the nine day conference. Social perceptions and sociometric data were collected. Trainees used "perceptions of change" evokements to enhance feedback. The results of these procedures will be presented in the evaluation session later in this report.

To assist the practioner trainees apply the R&D technologies to their specific district problem, a problem solving model was emphasized throughout the intensive training conference. The practitioner task teams were encouraged (a) to define the problems and goals early in the workshop; (b) to have brainstorming sessions; (c) to consider relevant factors such as resources, present programs, and outputs; (d) and to plan tentative approaches to the problems using the new R&D technologies.

The diffuser trainees were assigned to a group to act as the group recorder and as a link to the developers. It was emphasized that they were not the resident expert. The developers presented the content materials and "floated" among the task-teams in a consulting role.

The sequence of daily activities during the conference follows.

Tuesday, August 1, 1972
- Registration
- Completion of Formative Evaluation Instruments
- Orientation Session
- Get Acquainted Social
- Dinner
- Resource Management Exercise

Wednesday, August 2, 1972
- Breakfast
- Systems Approach Presentation
- Task-Team Session to Refine District Problems
- Lunch
- Overview of Skills Presentation by Developers
- D-Group Sessions
- Dinner
- Flowcharting, PERT, CPM Presentation

Thursday, August 3, 1972
- Breakfast
- Precision Classroom Teaching Presentation
- Trend Projection Presentation
- Chart Acceleration Analysis Presentation
- Lunch
- Task-Team Sessions
- D-Group Sessions
- Dinner
- Cluster and Fishbowl Exercise

Friday, August 4, 1972
- Breakfast
- Review of Evaluation Methodologies Presentation
- Curriculum Planning Presentation
- Lunch
- Facilities Planning Presentation
- Task-Team Sessions
- Free Time
- Dinner
- Decision-Making and Personal Goals Exercise

Saturday, August 5, 1972
- Breakfast
- Task-Team Sessions
- Delphi Demonstration
- Lunch
- Free Time

Sunday, August 6, 1972
- Free Time
- Task Team Sessions
- Dinner
- Cost Effectiveness Analysis Presentation

Monday, August 7, 1972
- Breakfast
- Task-Team Sessions
- Lunch
- D-Group Sessions
- Dinner
- Task-Team Sessions

Tuesday, August 8, 1972
- Breakfast
- Task-Team Sessions
- Lunch
- Change Strategies Lecture
- D-Group Sessions
- Dinner
- Planned Change Exercise

Wednesday, August 9, 1972
- Breakfast
- Task-Team Sessions
- Lunch
- Task-Team Sessions
- Dinner
- Task-Team Sessions to Complete Planning

Thursday, August 10, 1972
- Breakfast
- Review of Workshop by the Developers
- Presentation of Projects by the Practitioner Trainees
- Summative Evaluation
- Lunch
- Adjournment

Preservice Workshops

During the developmental stages of the training model, it was reasoned that no matter what the practitioner trainees learned during the intense training conference, the ultimate product of the program would be the trainees' application of the R&D methodologies in their school districts. Consequently, a one day preservice workshop was planned for late August to facilitate the implementation of the problem solving strategies that had been developed in the workshop. Using the diffuser trainees, two activities were planned for these one day workshops. First, the scheduling of a meeting with the trainees and other district administrators and teachers to introduce the problem solving strategy and stimulate early application of the R&D technologies.

However, during the intensive training conference, the task-teams indicated that they did not feel these workshops were necessary. They indicated that the last minute details for opening schools would be complicated by these conferences. Consequently, these were not tested.

Mini-Lab Workshops

It was anticipated that resistance to the new R&D skills would develop in six to eight weeks after school began. Therefore, two or three member diffuser trained teams were to hold a mini-lab workshop to assist the practitioners in overcoming what resistance they had encountered. These mini-labs were tailored to each district. They included both human relations seminars with administrators, and teachers, and R&D skill training for district practitioners who did not attend the August conference. These were held in all districts with the thrust being in R&D skill training. The number and evaluation of this process area will be presented and discussed in the evaluation section of this report.

Inservice Workshops or Conference

Starting in January, 1973, the diffuser trainees were to conduct bimonthly inservice workshops in each school district. As in the mini-lab workshops, these were to be directed to the particular needs of each district. However, the general activities were to include the following: meetings with the participating practitioners for support and review, human relations seminars to overcome "pockets" of resistence, and further training in the content areas for additional school personnel.

Instead of starting in January, 1973, these workshops or conferences began in September, 1972, and were given on an almost weekly basis. Although greater detail will be given in the evaluation section of this report, demand from the practitioner trainees was the highest for this post-intensive training conference service.

Technical Assistance

The diffuser trainees were to telephone the practitioner trainees twice a-month to discuss the problems they were encountering. If a particular program or evaluation procedure not covered in sufficient detail in the August conference was needed, the diffusers were able to supply the information with little costly delay. The frequency of inservice conferences that developed reduced the need for this telephone service. Rather the diffuser trainees tended to replace this service with personal contacts.

Monitoring and Evaluating Usage

As soon as the August workshop ended, diffuser trainees started to count as many of the training process and product indicators as possible. The counts were to be totaled monthly and placed on monthly behavior charts so that acceleration could be determined. These monthly process and product growth charts were used not only to evaluate the training program but to remediate any lagging districts. The diffuser trainees and developers monitored these charts and suggested remediation at the points where poor practice was shown. The process and product indicators that were collected will be delineated and presented in the evaluation portion of this report.

In addition, attitudinal data were collected from the practitioner trainees. Items were constructed so that the trainees could indicate the intensity and direction of feelings toward each content area and activity of the training model. These data will be presented later in this report in the evaluation section.

Academic Program for Diffuser Trainees

One criterion for selecting the diffuser trainees was their meeting regular graduate admission standards at the University of Kansas. Individual doctoral programs with interdisciplinary and field based thrusts were to be developed for each diffuser trainee. The interdisciplinary portion included a major in educational administration and research methodology with minors in a cognate field such as sociology, business, human relations, or psychology. The field based portion was working with the practitioners trainees on the implementation of the problem solving strategies in their school districts; that is, this phase was the actual diffusion of new technologies in the public school setting.

Outputs

Development Team

Training Materials. These materials have been presented previously in the "Content Development" section of this report. Although a formal evaluation of the specific materials will be made later, a few observations are pertinent here.

The thrust of this pilot program was the testing of a field based diffusion model rather than the developing of elaborate training exercises for each content or skill area. In evaluating the training materials for disseminiation, it becomes apparent that many different levels of accomplishment are represented in presentations. For example, some of them are simply topical outlines with few indicators of the specific exercises or discussion topics. Even though this was not a primary emphasis, greater care in developing self-instructional packages would assist in transporting the training model to other organizations.

Unanticipated Outputs. One of the surprising results of this training program was the wide spread adoption of the technologies by the developers. For example, Baumgartel used trend projection for studying various programs and enrollments in the College of Liberal Arts and Sciences. Miskel used the Flowcharting, PERT, and CPM materials in three workshops sponsored by the Division of Continuing Education. Lindsley adapted various interpersonal activities for his regular university classes. All of the developers used more visual media devices such as multiple overhead projectors and newsprint pads. In summary, the developers became very good consumers of each others technologies.

Although not completely unanticipated, new cooperative relationships have become apparent. The developers have indicated a desire to continue such a cooperative field based training program. The diffuser trainees have established new and extended existing relationships with the School of Business. As a result many new courses have been opened to education graduate students. Examples include such courses as "Quantitative Methods for Business" and "Cost Accounting."

Diffusers

The diffuser trainees acquired a knowledge of the specific R&D methodologies presented in the intensive conference, those requested by the practitioner trainees in the field, and those learned in their regular academic courses. The years academic program for each diffuser trainee is summarized in Table 16.

The frequency and type of field experiences will be presented later. However, in evaluating the data presented in Table 16, it is apparent that diverse academic programs were pursued by the diffuser trainees. All of the trainees did take some courses in research, statistics, and evaluation methodologies. Obviously, the academic training portion of the model was not well conceptualized as individual programs did not focus on developing high levels of conceptual and operational skills in the more sophisticated R&D technologies. Consequently, the diffuser trainees' academic program needs further refinement.

The five diffuser trainees completed 44, 29, 37, 39, 20 semester hours respectively. Diffuser trainee E withdrew from the program after the first semester. Three of the remaining four have enrolled in thesis hours and should complete the requirements for the doctoral degree during the 1973 Fall Semester. Diffuser trainee C will continue in residence study this year and should complete the degree requirements in the Summer of 1974.

Practitioners

One of the most important outcomes of the training program was the skill development in and application by the practitioner trainees. As the result of the Intensive Training Conference, the four school district task-teams had planned a strategy to solve specific problems. A brief description of these outputs follow with a more detailed discussion in the evaluation section of this report. In addition, sample materials produced by the task teams are found in Appendixes A, B, C, and D.

Turner Unified District (USD 202). As mentioned previously in this report, the problem in which this task-team came to the Intensive Training Conference was a vague set of attitudes that a need existed to "humanize" their schools. These attitudes were based on the following types of data: a high failure rate, student and teacher discontent, and an undefined apathy in the schools.

During the workshop the task-team spent several sessions in specifying the problem in operational terms. The results of these activities are summarized in Appendix A. Next a PERT chart for planned activities and after the training conference specific implementation activities were planned. These are also presented in Appendix A.

This task-team essentially planned for the use of all the skill areas. The following are examples of the use of the new methodologies: (a) Delphi technique was used to assess teacher priorities; (b) Cost-effectiveness analysis was attempted in some of the specific programs; Charting was started in principal contacts with new teachers, discipline cases, and the lunch program; Facilites planning was used to improve student facilities; And planned change techniques were used during the second semester in continuing education class with teachers.

Paola Unified School District (USD 368). This task-team, in conjunction with a cooperating task-team from the Kansas State Department of Education, had difficulty in defining their problem area in operational terms. They did agree that a plan for an ongoing needs assessment in the language arts curriculum should receive priority. Consequently, during the Intensive Training

Table 16

Summary of the Academic Programs
for the Diffuser Trainees

Diffuser		Course	Credit Hours
A	Educ. 206	Intro. to Educ Adm.	2
	Educ. 397	Junior College Literature	2
	Bus. 390	Business Policy	3
	Educ. 391	Higher Educ. in U.S.	2
	Educ. 392	College Student	2
	Educ. 398	Adv. Organ. Theory	3
	Educ. 260	Hist. and Phil. of Educ.	3
	Bus. 225	Labor Relations	5
	Educ. 396	College Tchg. Exp.	2
	Educ. 398	Readings in Higher Educ.	2
	Educ. 393	Evaluation in Higher Educ.	2
	Educ. 397	Program Analysis	2
	Educ. 316	State and National Politics	2
	Bus. 398	Prob. in Bus. Admin.	4
	Educ. 397	Readings in Higher Educ.	2
	Educ. 399	Doctoral Thesis	6
			Total - 44
B	Educ. 205	Principalship	3
	Educ. 396	College Teaching Experience	2
	Psych.219	Public Attitude Change	3
	Educ. 399	Doctoral Thesis	21
			Total - 29
C	Educ. 203	Supvsn. of Instruction	3
	Educ. 205	Principalship	3
	Educ. 210	Accountability	3
	Educ. 281	Statistical Methods I	3
	Educ. 311	Personnel Administration	3
	Bus. 327	Cost Analysis and Control	3
	Bus. 398	Special Problems	3
	Educ. 205	Law	2
	Educ. 206	Educational Leadership	2
	Educ. 310	Behavioral Planning	3
	Educ. 398	Applications of Computer	2
	Bus. 304	Quant. Methods in Business	4
	Educ. 397	R&D Training	3
			Total - 37

Table 16 Continued

Diffuser	Course		Credit Hours
D	Educ. 281	Statistical Methods I	3
	Germ. B	Reading	3
	Bus. 2	Labor Relations	5
	Bus. 311	Organ. and Admin.	3
	Educ. 382	Statistical Methods II	3
	Educ. 396	College Tchg. Experience	2
	Bus. 356	Adv. Organ. and Admin.	3
	Educ. 393	Program Evaluation	2
	Educ. 399	Doctoral Thesis	15
			Total - 39
E	Educ. 239	Interaction Analysis	2
	Educ. 283	Meth. of Educ. Research	2
	Educ. 306	School Plant Development	3
	Educ. 397	R&D Training	2
	Educ. 210	Accountability	3
	Educ. 311	Personnel Admin.	3
	Educ. 398	Adv. Organ. Theory	3
	Educ. 398	Computer Applications	2
			Total - 20

Conference, a flowchart was developed to sequence activities leading to the development and adoption of a comprehensive K-12 language arts program designated PLAN 368. The flowchart for PLAN 368 is presented in Appendix B.

Seemingly, these two task-teams had some difficulty in planning and using the R&D technologies. These difficulties will be discussed in greater detail later in this report. However, examples of skill applications are the following: Teachers were assessed as to the major problems in the current language arts curriculum; The flow chart of activities developed at the workshop was followed in the establishment of teacher task teams and gaining support for the project from the Superintendent and faculty; And eight teachers and two building principals have been introduced to and are utilizing precision teaching techniques to assist with classroom and individual learning problems in the district.

Shawnee Mission Northwest. This task-team from Unified School District 512 was charged with the problem of co-ordinating curricular activities in the northwest attendance area. During the Intensive Training Conference an overall project plan was developed. The plan and supporting materials are reproduced in Appendix C. The following are examples of R&D skill applications: Organized a new temporary task-team of teachers and administrators from three levels to attack a boundary problem; PERT or flowcharting was used by all team members in other work areas; And at least two members applied some of the human relations techniques.

Shawnee Mission Career Education. This task-team planned the development of a comprehensive K-12 career education program for USD 512. The skill areas used by this team included PERT, flowcharting, human relations techniques, facilities planning, and opinionnaire development for evaluation. Supporting information for this task-team is found in Appendix D.

Summary of Practitioner Outputs. Twenty-seven practitioners were trained in the Intensive Training Conference in 11 R&D skill technologies. These were applied, at different levels of sophistication and frequency, in their respective organizations. Greater detail will be given to these factors in the next section of this report--Evaluation.

Evaluation

Behavioral descriptions, attitudinal scales, and frequency counts comprised the primary data collection methods that were used to evaluate the content, processes, and products of the training model. The data for the behavioral descriptions consists of written narrations and document analyses from the program archives. Attitudinal scales were used to measure the positive or negative sentiment toward processes and products of the training program as well as the organizational climate of the school districts. Finally, frequency count data of selected process and product indicators were compiled by the diffuser trainees.

The evaluation data and interpretations will be presented in three parts that parallel the measurement procedures. Consequently, the presentation sequence will be behavioral description, attitudinal and frequency count data.

Behavioral Descriptions

Review of Data from Document Analysis Presented Earlier in This Report

1. An intra- and inter-disciplinary team of program developers was assembled. Developers represented the areas of administration, evaluation, and curriculum in education as well as business and social psychology.
2. Five R & D diffuser trainees were recruited. These trainees represented diverse academic, experiencial, and geographic backgrounds. However, a lack of diversity existed in the minority ethnic composition.
3. Hierarchically differentiated R & D practitioner task-teams were recruited from school districts and the state education agency in Kansas. These primarily presented rural and suburban educational problems with a general deficiency in urban and minority ethnic group educational problems.
4. The developers planned formal learning experiences for R & D training. These consisted of materials for eleven content areas. The sophistication ranged from simple lectures to transportable learning exercises. With some refinement, transportable learning packages could be developed from these basic formulations.
5. An inadequate orientation program for the R & D diffuser trainees was held. A proposal for remeding this problem will be presented in the recommendations section of this report.
6. The intensive training conference with a "lab within a lab" was held for nine days in August, 1972. No overriding difficulties were encountered during the conference. This will be evaluated further in the following portions of this report.
7. The preservice workshops were judged unnecessary by the practitioner trainees. Consequently, they were not held.
8. Several unanticipated results occurred as a result of the program. Wide use of the technologies was made by developers and new cooperative relationships among developers became evident.

9. The diffuser trainees had extensive field experiences on their academic programs. However, a weakness was a lack of focus and a lower than desired level of sophistication in developing conceptual and operational R & D skills.

10. All of the practitioner task-teams developed extensive plans during the intensive training conference. Further data relating to applications follow in succeeding parts of this report.

Additional Behavioral Descriptions:
Letters Received from R & D Practitioners

Letter One. I think your R & D approach is very sensible and would like to see this type of training made available to more administrators and teachers in the field. I am glad to see the university becoming interested in school problems at the local district level. It is common knowledge that there has always been a wide chasm between the educational theories taught by the schools of education and the application of those theories at the district level. I believe you have chosen the path which will eventually close the gap between theory and practice and will foster greater understanding and respect between university professors and public school personnel.

I have enjoyed being a part of your project and sincerely hope you will continue your efforts to bring the services of the university to the people.

Letter Two. The Strut Program has meant a great deal to Pierson this year. I feel it was the cause of one of the best starts we have ever had. It has led to a great deal of evaluation on the part of the administration and staff. It has also helped the teacher see the student as an individual and to evaluate the content and grading standards of teachers. I would hope that many of our teachers will take the class offered second semester in the Turner district, so that they can have the first-hand experience of determining and solving their own problem areas.

The K.U. staff has been most helpful and has always been available to help and guide the staff. The program at K.U. has been one of the most rewarding experiences I have ever been a part of.

Letter Three. I would like to just simply state that your workshop last summer and the follow-up help which has been provided is the most refreshing experience that I have had in public education. Through your efforts in the workshop, we had an opportunity to sit down as a professional school district staff and exchange ideas, etc. If there should be a continuation of the project, I would recommend it very highly.

Letter Four. Make the program flexible to meet the needs of the School District. Better pre-workshop briefing. Use more logic (not theory). Theories are great, but nine times out of ten they will not work. Go into the field and find out what is going on. Some of your instructors needed more help than the personnel taking part in the workshop. Don't take this wrong. I gained a great deal from you and some of the others and felt it was really worthwhile.

Letter Five. Since much of the data is still incomplete that is necessary to evaluate the effects of our district's participation in the K.U. Research and Development Project, some summary type generalizations must be drawn.

All members of our staff who participated in the summer workshop were very favorably impressed with the information gained and fine interest and cooperation shown us by the K.U. staff.

The project and workshop has tended to revitalize our interest in promoting, developing and implementing research in our secondary schools. The techniques and research methods as well as the accompanying facilitating techniques learned at the workshop are being actively used in our school district.

With the continuing assistance of the project diffusers and project staff members our work is progressing nicely on the research projects designed during the workshop.

We hope to actively continue this fine working relationship that has developed between K.U. and our local school district.

Attitudinal Evaluation

The instruments that were used to evaluate the program are presented in Appendix E. The Post Task-Team Meeting questionnaire was completed after each task force meeting during the nine day resident conference. The Intensive Training Conference Evaluation form was administered on the last day of conference. The Content Phase Evaluation and the Organizational Climate measures also were administered on the final day as well as again in March, 1973. Finally, the Level of Innovation measure was completed in March, 1973. The resulting data and interpretations are presented in the following paragraphs. In all cases, where group data are summarized, the sizes are as follows: USD 202, N = 7; USD 368, N = 5 and KSDE, N = 5; USD 512A, N = 4 (Northwest Area); USD 512B, N = 4 (Career Education); and Total Trainees, N = 25.

Task-Team Meetings

As previously indicated on page 27, each of the nine task-team meetings during the intensive training workshop was monitored with an eleven item questionnaire. These were quickly tabulated and the results given as feedback to each of the task teams. In addition, the developers monitored the charts and as the group responses turned downward, group process assistance was provided. The feedback data are presented in Table 17. These data consist of item mean responses across the four groups for each task-team meeting.

Table 17

Attitudinal Responses of the Practitioner Trainees
Toward the Nine Task-Team Meetings

Item Mean Response For Meetings

Group	1	2	3	4	5	6	7	8	9
Goal Clarity									
1	4.9	5.1	6.5	3.7	6.5	6.0	6.5	5.0	6.5
2	4.9	3.5	5.3	5.8	5.9	3.5	5.7	6.1	3.6
3	5.8	6.7	7.0	7.0	7.0	7.0	7.0	7.0	
4	4.8	6.1	6.1	6.5	7.0	5.5	6.0	7.0	6.0
Decision-Making Influence									
1	4.9	4.5	5.5	4.9	5.3	5.5	6.5	5.8	6.1
2	4.3	3.0	5.2	5.2	5.2	5.1	5.3	5.5	3.8
3	5.0	5.2	5.7	5.8	6.3	7.0	6.0	7.0	
4	5.5	5.3	5.7	5.3	6.5	5.5	5.9	6.1	5.9
Decision-Making Direction and Structure									
1	3.9	5.0	5.9	4.6	6.1	6.0	7.0	5.2	6.1
2	4.5	3.4	5.5	5.0	5.5	4.6	5.6	5.8	3.9
3	6.0	6.5	7.0	6.5	6.8	7.0	7.0	7.0	
4	6.2	6.2	6.3	6.8	6.8	6.0	6.1	6.1	5.8
Member Consideration of Feelings and Needs									
1	5.4	5.8	5.7	5.8	6.0	6.3	5.9	6.2	6.5
2	6.5	5.7	5.9	6.0	6.1	6.0	6.3	6.0	5.5
3	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
4	6.5	6.7	6.6	7.0	7.0	6.5	6.8	6.9	6.8
Conflict Management									
1	5.1	5.8	5.3	4.5	6.4	6.0	6.0	5.8	6.7
2	6.1	5.6	4.8	6.5	6.3	5.5	6.1	5.9	5.9
3	6.5	6.8	6.8	7.0	7.0	7.0	7.0	7.0	
4	6.0	5.8	6.8	6.8	7.0	6.4	6.5	6.5	6.5
Individual Openness									
1	5.9	5.9	5.9	6.5	6.3	6.0	6.7	6.6	6.7
2	6.3	5.5	5.9	6.3	6.1	6.3	6.3	5.6	6.3
3	6.2	6.8	7.0	7.0	7.0	7.0	7.0	7.0	
4	5.7	6.3	6.4	6.7	6.8	5.8	6.1	6.3	6.5
Group Problem Solving									
1	5.5	4.7	4.3	4.6	6.1	6.3	6.3	4.8	6.3
2	5.2	4.9	5.0	6.0	5.5	6.0	5.9	5.5	5.0
3	5.9	6.3	6.5	6.8	7.0	7.0	7.0	7.0	
4	5.2	5.8	5.8	6.7	7.0	6.2	6.5	6.5	6.1

Table 17 Continued

Item Mean Responses for Meetings

Group	1	2	3	4	5	6	7	8	9
				Member Commitment					
1	5.3	5.2	6.0	5.0	6.1	6.0	6.5	6.5	6.5
2	5.3	4.2	5.4	5.2	5.8	4.3	6.1	5.9	4.5
3	6.2	6.5	7.0	7.0	7.0	7.0	6.8	7.0	
4	6.0	5.5	6.0	6.0	7.0	6.0	6.8	6.5	5.7
				Progress Toward Goal					
1	4.5	5.7	6.0	4.8	6.3	6.0	6.0	6.0	6.3
2	4.5	3.5	6.2	5.0	6.5	3.2	6.1	5.8	4.5
3	6.0	6.5	7.0	6.8	7.0	7.0	7.0	7.0	
4	5.3	6.3	6.2	6.0	7.0	5.8	6.2	6.8	6.1
				Overall Satisfaction					
1	5.4	5.5	6.3	5.0	6.5	6.5	6.4	5.6	6.5
2	5.9	3.4	6.0	6.3	5.6	3.1	5.9	6.0	4.2
3	6.2	6.5	6.7	7.0	7.0	7.0	7.0	7.0	
4	5.2	6.0	6.8	7.0	7.0	5.9	6.5	6.8	6.0
				Use of Resources					
1	6.3	5.9	6.7	6.0	5.5	6.8	6.8	5.1	6.5
2	4.5	4.2	6.1	5.5	5.7	6.0	6.1	5.6	5.3
3	5.0	6.5	6.2	7.0	7.0	7.0	7.0	7.0	
4	5.6	6.0	6.0	6.0	4.3	6.0	7.0	7.0	5.8

The general trends include the following: (a) the mean response tended toward the high end of the scale; (b) a high point was reached during meeting five which occurred before an overnight recess; and (c) a slight decrease in the last means for the last two meetings. Specific trends include the following: (a) USD 202 started low, gradually climbed, decreased, and then exhibited a steady climb for the remainder of the workshop. (b) USD 368 and KSDE appeared to be the group with the greatest problems with a fluctuating degree of success but a general decline overall. (c) USD 512A peaked quickly and remained a highly effective group process. (d) USD 512B made a steady climb and remained at a high level.

The task-teams, with the possible exception of USD 368 and KSDE, appeared to have a very successful group problem solving approach. There were difficulties as experienced in meetings 6 and 9, but in general the task-team activities were perceived in a very positive manner. Conbining these data with the plans developed for their school districts (Appendixes), the task-team structure appears to have a high potential for introducing change into educational systems. In addition, the "lab within

a lab" procedure insured the collection of the needed information to attack the problems of declining group productivity.

Evaluation of the Intensive Training Conference

Process Phase. To evaluate the attitudes of the practitioner trainees toward the processes used during the resident workshop, the Intensive Training Conference Evaluation form was completed during the last session. This evaluation instrument consists of 21 Likert-type items and two open ended items. The items are presented in Appendix E.

As can be noted from the content analysis of items, the instrument was designed to collect attitudinal data to answer three questions. First, did they feel they had made personal growth? Second, did they find the program useful and practical rather than being too abstract? Third, were the conference's orgnaization, living environment, and staff relationships satisfactory?

The 21 Likert-type items had a five category response set. These categories were arbitrarily assigned a descending value of five to one. The results are presented in Table 18 in the form of item means ($\bar{X}$) and standard deviations (S.D.) for each of the five groups and for the total workshop.

One interpretation of the data presented in Table 18 is that the practitioner trainees, in general, had a very positive attitude toward the Intensive Training Conference. Five of the nine positively stated items had means over 4.0 for the total group. Conversely, nine of the twelve negatively stated items had means under 2.0 for the total group.

The USD 202 task-team had a very positive feeling toward the workshop. Eight of the nine positively stated items had means over 4.0 while ten of the twelve negatively stated items had means under 2.0. Only items 3, 10, and 16 had items that tended to be neutral.

The USD 368 and KSDE task-teams indicated the most ambivalent feelings toward the Intensive Training Conference. The USD 368 team had means over 4.0 on four of nine positively stated items and means under 2.0 on seven of twelve negatively stated items. The KSDE task-team had means over 4.0 on only two of the nine positively stated items but had means below 2.0 on ten of the twelve negatively stated items.

There are several possible reasons for these two groups having the more ambivalent attitudes toward the conference. First, the two groups were designated to work together by their respective organizations. However, the USD 368 group lacked a clear delineation of what their problem or goal was while the KSDE group did not know whether its relationship with the school district was to be advisory or directive. Second, the superordinate administrator in the USD 368 task-team was a new employee to the district. Consequently, he was somewhat hesitant because of a lack of knowledge regarding the existing programs, problems, and goals of the

Table 18

Item Means and Standard Deviations for the Five Groups on the Intensive Training Conference Evaluation Form

Item	Group											
	USD 202		USD 368		KSDE		USD 512A		USD 512B		TOTAL	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1. More Analytical	4.4	.5	4.4	.5	3.4	.5	4.5	.6	4.5	.6	4.2	.7
2. Did Not Meet Needs	1.4	1.1	2.2	1.6	1.6	.9	1.0	-	1.3	.5	1.5	1.0
3. Helped With Interpersonal Skills	3.7	.5	3.6	1.3	2.8	.4	3.3	1.0	3.3	1.0	3.4	.9
4. Too Theoretical	1.6	.8	1.8	.8	1.8	.8	1.7	.5	1.5	1.0	1.7	.7
5. Too Long	1.4	.8	2.2	.8	1.6	.9	1.5	.6	1.5	.6	1.6	.8
6. Lost Interest	1.9	.4	2.2	.8	2.8	.8	2.0	.8	2.0	-	2.2	.7
7. Poorly Motivated Staff	1.0	-	1.0	-	1.2	.4	1.0	-	1.0	-	1.0	.2
8. Contributed To Personal Growth	4.0	1.4	4.4	.9	3.4	.5	4.3	.5	4.3	1.0	4.0	1.0
9. Did Not Meet Needs	1.0	-	2.6	1.3	1.6	.9	1.0	-	1.8	1.3	1.6	1.0

Table 18 Continued

Item	Group											
	USD 202		USD 368		KSDE		USD 512A		USD 512B		TOTAL	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
10. Poorly Motivated Participants	2.3	.8	2.8	1.3	2.6	.5	2.8	1.5	2.0	.8	2.5	1.0
11. Helped Solve Problems	4.0	.6	3.8	.8	2.8	.5	3.8	.5	3.5	1.0	3.6	.8
12. Little Practical Value	1.9	1.2	1.2	.4	1.8	.8	1.8	1.0	2.0	.8	1.7	.9
13. Broadened Outlook	4.4	.5	3.8	1.3	3.0	1.0	4.5	.6	3.3	.5	3.8	1.0
14. Weak Teaching Material	1.4	.8	1.4	.5	1.4	.5	1.3	.5	1.5	.6	1.4	.6
15. Strong Teaching Method	4.4	.8	4.4	.5	3.8	1.1	3.0	1.8	4.0	.8	4.0	1.1
16. Needed More Group Discussion	2.3	1.4	1.8	.8	1.8	.8	2.3	1.0	2.3	1.0	2.1	1.0
17. Positive Personal Relationships	5.0	-	4.8	.4	4.2	.8	5.0	-	5.0	-	4.8	.5
18. Unsatisfactory Living Conditions	1.0	-	1.0	-	1.2	.4	1.0	-	1.0	-	1.0	.2
19. Significant Program	4.9	.4	3.0	1.2	3.6	.5	4.8	.5	4.0	.8	4.0	1.0

Table 18 Continued

Item	Group											
	USD 202		USD 368		KSDE		USD 512A		USD 512B		TOTAL	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
20. Poorly Organized	1.3	.5	1.4	.5	2.0	1.4	1.5	.6	1.5	.6	1.5	.8
21. Understanding Staff	4.0	1.2	3.2	1.3	4.2	.8	3.5	1.7	4.3	1.7	3.8	1.1

district. Third, the group had ten members and it may have been too large and diverse for concentrated problem solving and planning.

Both USD 512 task-teams, like the USD 202 task-team, had very positive attitudes toward the conference. The groups had item means over 4.0 on five and six of the nine positively stated items respectively. Conversely, they had item means below 2.0 on nine and ten of the twelve negatively stated items respectively.

General positive observations regarding individual items include the following. (a) Responses to Items 4 and 12 indicate that the participants felt the conference was practical and useful. (b) Responses to Item 7 show that the staff was extremely well motivated. (c) The teaching materials were strong as measured by Item 14. (d) Responses to Item 17 evidences the development of very positive interpersonal relationships. (e) The living conditions were very good as measured by Item 18.

Conversely, less positive or more ambivalent observations regarding individual items include the following. (a) Responses to Item 3 indicate that more assistance was needed in assisting the improvement of interpersonal skills. (b) Responses to Items 6 and 10 suggest some waning of interest and motivation on the part of the trainees. (c) The responses to Item 11 show some lack of actual problem solving. However, the overall mean values and low variance among the groups provide evidence that the Intensive Training Conference was very well received.

Content Phase. The specific content areas were evaluated with the Content Model Evaluation questionnaire found in Appendix E. This form simply asked each practitioner trainee to indicate their perceptions of the relative value of each content area. The format of the questionnaire consisted of listing the twelve content areas with the following four-point Likert-type response categories: Little Value, Moderate Value, Considerable Value, Great Value. These categories were assigned ascending values from one to four. This evaluation instrument was first completed on the final day of the Intensive Training Conference and a second time six months later. The original and follow-up Content Model Evaluation data for each group, the total combined group, and the changes in perceived value are presented in Table 19.

With the exception of facilities planning, the trainees, on the whole, initially perceived all of the R & D content skills to be of considerable value. More specifically, the USD 368, KSDE, and USD 512B task-teams rated the interpersonal and group process activities as being only of moderate value. The USD 202 group generally rated all of the skills as being of considerable value with charting and trend projection being of great value. The USD 512B perceived flowcharting, CPM, and PERT skills to be of particular value.

However, and as could be expected, the perceived value of the skills generally declined after leaving the workshop. Specifically, curriculum planning, task-teams, and planned change were the three of twelve skill areas that maintained a 3.0 or greater mean six months after the intensive conference. Only planned change increased in value after the time

Table 19

Item Mean Responses for the First and Second Administrations of the Content Phase Evaluation Questionnaire Across the Trainee Groups

Item	Group: USD 202 Mean 1st	USD 202 Mean 2nd	USD 368 Mean 1st	USD 368 Mean 2nd	KSDE Mean 1st	KSDE Mean 2nd	USD 512A Mean 1st	USD 512A Mean 2nd	USD 512B Mean 1st	USD 512B Mean 2nd	TOTAL Mean 1st	TOTAL Mean 2nd	Change in Mean for Group Total
1. Systems Approach	3.1	2.7	3.0	2.0	3.0	3.0	3.5	2.8	3.5	3.2	3.2	2.7	-.5
2. Curriculum Planning	3.1	3.1	3.6	2.8	3.0	2.2	2.5	3.2	3.0	3.5	3.0	3.0	-
3. Flowcharting CPM, PERT	3.4	2.9	3.2	2.2	3.2	2.6	3.5	3.0	4.0	3.2	3.5	2.8	-.7
4. Facilities Planning	3.0	3.0	2.6	2.4	2.2	2.0	2.0	2.2	2.2	2.0	2.4	2.3	-.1
5. Trend Projection	3.9	2.9	3.0	2.8	3.4	2.6	3.5	1.8	3.5	2.8	3.5	2.6	-.9
6. Delphi Technique	3.7	2.6	2.6	2.0	3.0	2.8	3.0	2.2	3.2	3.0	3.1	2.5	-.6
7. Precision Teaching	3.7	3.4	3.4	2.4	2.6	1.8	3.2	2.2	3.0	3.0	3.2	2.6	-.6
8. Cost Effectiveness	3.0	2.9	3.4	2.0	3.2	2.2	2.5	2.8	2.5	2.8	2.9	2.5	-.4

Table 19 Continued

Item	Group: USD 202 Mean 1st	USD 202 Mean 2nd	USD 368 Mean 1st	USD 368 Mean 2nd	KSDE Mean 1st	KSDE Mean 2nd	USD 512A Mean 1st	USD 512A Mean 2nd	USD 512B Mean 1st	USD 512B Mean 2nd	TOTAL Mean 1st	TOTAL Mean 2nd	Change in Mean for Group Total
9. Task Teams	3.7	3.4	3.6	2.8	3.2	2.8	3.8	3.5	3.8	3.5	3.6	3.2	-.4
10. Interpersonal Relations	3.4	3.6	2.4	1.8	2.6	2.2	3.0	3.0	2.5	3.0	2.8	2.7	-.1
11. Evaluation	2.9	2.9	3.8	3.2	2.4	2.6	2.2	3.0	3.0	3.0	2.9	2.9	-
12. Change	3.7	3.3	2.8	2.8	2.6	3.0	3.5	3.5	3.2	3.8	3.2	3.3	+.1

had elapsed. The greatest decline in perceived value occurred in charting-trend projection, flowcharting-CPM-PERT, Delphi technique, and precision classroom teaching. To test the significance of the change in direction and magnitude, the Wilcoxon matched-pairs signed-ranks test was calculated. With N=25, a T of 33 and a probability of less than .005 was found. Consequently, a statistically significant decline in the perceived value of the content areas occurred. Even with this decline, the mean values remain relatively high with most being rated as being of considerable value.

Two possible explanations for this decline are immediately obvious. First, at the end of the workshop there was a "halo" effect of just having a generally positive experience. The previously presented data on the intensive conference evaluation that a positive mood prevailed supports this contention. Second, the four techniques that suffered the most decline require considerable time and effort to implement into practice. The maintenance of the standard charts in trend projection and precision teaching and the multiple questionnaires in the Delphi technique probably were found to be burdensome in practice by the trainees. In conclusion, the techniques were generally viewed positively, with considerable utility.

Unless specific problems require it, facilities planning should be deleted. Perhaps the close relationships among charting, trend projection, and precision-classroom teaching and the decline in perceived value suggest combining the methods into one with a corresponding decrease in emphasis during the training conference. Finally, the task-team and planned changed skill areas should receive increased emphasis during future Intensive Training Conferences.

Organizational Climate

A thirty (30) item research instrument, the Organizational Climate Inventory, was used to evaluate the reciprocal relationships between the training program and the change in climate as well as the relationships between climate and innovative effort. The items had a four-point Likert-type response set. These were assigned values of one for closed climate to four for open climate. The 30 items are found in Appendix E.

For the purpose of this evaluation, only the 16 items related to the interpersonal and group process elements of organizational climate will be summarized in this report. Table 20 is comprised of the pre- and post-climate data in the form of item means across each group.

To test for a statistical difference in direction and magnitude between the pre- and post-climate levels indicated by the 25 trainees, the Wilcoxon matched-pairs signed-ranks test was computed. The resultant T value was not significantly different from zero. However, some interesting observations can be made about the trends in the item means. For example, four of the five organizations had slight increases in the climate favorability while only USD 368 had a decline. The two task-teams from USD 512 responded that climate in their organization was the most open while the KSDE was the most closed. Moreover, the responses to the

Table 20

Item Means for the Pre- and Post-Climate Data
Across each of the Five Groups

	Group									
	USD 202		USD 368		KSD		USD 512A		USD 512B	
Item	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
2	3.0	2.7	3.2	3.0	2.6	2.8	3.0	3.0	3.2	3.2
4	3.0	2.7	2.8	2.8	2.4	2.4	3.2	3.0	3.0	3.5
9	2.9	3.0	3.0	3.2	2.0	2.4	3.0	3.0	3.5	3.8
11	3.9	3.4	4.0	3.6	3.4	3.4	3.5	4.0	3.5	3.8
13	2.1	2.3	2.8	2.8	3.0	2.6	2.8	3.5	3.8	4.0
15	2.6	3.0	3.2	2.4	2.6	3.0	3.5	3.8	4.0	3.8
17	2.9	2.7	2.8	2.2	3.0	2.6	3.2	3.8	3.0	3.0
18	2.6	2.3	2.2	1.6	1.6	2.0	3.2	3.2	3.0	3.2
19	2.7	2.6	2.2	2.0	2.6	2.0	2.2	2.2	2.8	2.5
20	2.7	3.0	3.2	3.0	2.6	2.8	3.0	3.2	3.0	3.2
21	2.7	3.6	2.8	3.0	2.2	3.6	3.2	3.8	4.0	4.0
22	2.6	2.9	2.8	2.6	2.6	2.4	3.2	3.0	2.5	3.2
23	2.7	2.7	2.8	2.6	2.6	2.2	2.5	3.0	3.0	3.5
25	2.6	2.9	3.0	2.6	3.4	3.0	3.2	3.8	3.5	3.8
27	3.4	3.3	3.4	3.6	3.0	2.8	2.8	3.2	3.2	3.2
29	2.1	2.3	2.8	2.4	1.8	2.2	2.8	2.8	3.2	3.8
Sum	44.3	45.4	47.0	43.4	41.4	42.2	48.5	52.3	52.2	55.5

questionnaire were stable overtime as not a single item mean differed as 1.0 between the pre- and post-responses. Finally, the means tend to be above the middle point (2.5) of the scale.

Organizational Climate
and Innovative Effort

As previously mentioned, the Level of Innovation measure was completed in March, 1973 by the 25 practitioner trainees. This instrument consisted of three open ended questions asking the practitioners to identify techniques they had applied, used to solve problems, and the outcome of the application. The level of application and impact was designed as the innovative effort. The instrument can be found in Appendix E.

The responses were content analyzed by the diffuser trainees, a project co-director, and the project evaluator. Four content analysis categories were used to code the data. The categories and their definitions are as follows: (a) No effort, no adoptions and nothing new from the training; (b) general non-specific effort, vague indication that two or less of the skills had been used but without stating how, where, or when they were used; (c) minor effort, listing three or more skill applications that were narrow in scope and involved less than three other people; and (d) major effort, made several minor adoptions that involved several people and had large effects or impact. Each of the five coders evaluated the responses independently and assigned them to one of the four categories. These category assignments were then discussed by the coders and a consensus reached on the level of innovative effort for each individual.

The effort categories were arbitrarily assigned ascending values of one to four. The mean levels of innovative effort for the task-teams are as follows: USD 202--2.9, USD 368--2.0, KSDE--1.2, USD 512A--3.2, and USD 512B--2.5. The mean value for the 25 practitioners was 2.4 which is very close to the conceptual mean of 2.5.

These results indicate a range of effort from none to major with the most being between at the general non-specific efforts and the minor effort levels. To test the assertion that innovation effort is related to organizational effort a Spearman rank correlation coefficient (r_s) was calculated. The resulting $r_s = .33$ is statistically significant at the .05 level for a one-tailed test. Consequently, the conclusion is tenable that the organizational climate and the level of innovative effort are positively related.

Summary of attitudinal evaluation data. (a) The task-teams, as temporary structures to attack specific problems, combined with initial training through a "lab within a lab" procedure were perceived as being of high value to the practitioner trainees. (b) The Intensive Training Conference was also perceived in a very positive sense. Most of the evaluation items related to this process had mean item values in the most positive category possible. However, the responses indicated that more emphasis should be placed on the improvement of interpersonal skills, that the conferences may have been too long as the trainees' interest waned, and some lack of actual problem solving. (c) The content areas were also

evaluated positively but the level declined over time. Specific recommendations include the following: delete facilities planning, combine the closely related skill areas of charting, trend projection, and precision-classroom teaching into a single skill area, and expand the task-team and planned change skill areas. (d) The organizational climate did not change significantly during the training program but the more open climates tended to exhibit a higher level of innovative effort.

Frequency Count Evaluation

Professor Ogden R. Lindsley, Project Co-Director, was to have prepared this portion of the report. However, he found it impossible to accomplish this task. Consequently, the Training Model was not evaluated using this methodology. Perhaps, at a later date, this part of the evaluation will be supplied as an addendum to the present report.

Proposed Training Model Revisions

Content Phase

A fundamental modification is recommended in this portion of the model. This revision includes the deletion of the programming and budgeting content areas and the consolidation of the loosely integrated implementing area into a change theory and practice area. The result is a Planning, Evaluation, and Changing System framework.

The rationale for these modifications is based on the following evaluation findings (a) Cost-effectiveness as the budgeting content was not perceived positively by the practitioners and was not used in the public school setting. Perhaps this technique is too sophisticated for adequate development in such a short workshop. (b) The programming content area as represented by precision-classroom teaching seemingly was more applicable to teacher-student problems and not widely applicable to administrative planning. Moreover, the implementing area represented by task-team and interpersonal skills is more accurately designated planned change.. Consequently, the new planned change are should include general change theory, task-teams, personal and professional growth exercises, and organization development skills. (c) Finally, the intensive training conference was perceived as being too long and should be shortened. Therefore, the less desirable or applicable content is to be deleted. In addition to the previously mentioned precision-classroom teaching and cost-effectiveness presentations, the facilities planning content also should be deleted. Another possibility in using the conference time more efficiently is the development of learning packages and having different task-team members assume the responsibility for mastering different content skills. This would allow for the application of the content to the previously defined problem earlier in the workshop.

In summary, the content phase of the revised training model integrates the skill areas, which represent planning, changing, and evaluating technologies, into a systems analysis framework. This integration is accomplished by conceptualizing the system approach as a modern version of the scientific method applied to the problems of social organizations. That is, by clearly defining the problem, planning alternative problem solving and implementing approaches, and providing for the evaluation of each approach, more rational and hopefully more effective instructional and administrative decisions can be made. Consequently, the systems approach in this model is conceived as an empirically testable problem-solving method that already has achieved some success in military, governmental, and industrial applications. This revised phase is summarized in Table 21.

Process Phase

The proposed modifications in the process phase of the training model are relatively minor and only involve changes in emphasis, timing, or number of participants. These recommendations are based primarily on the findings presented in the behavioral data evaluation section.

Table 21

Revised Content Phase of the Training Model

Content Skill	Systems Analysis Area
Overview to the Systems Approach	
Delphi Forecasting Technique →	
Trend Projection →	-Planning
Performance Evaluation and Review Technique (PERT) →	
Task-Teams →	
Change Theory →	
Personal Growth →	-Changing
Professional Growth →	
Organizational Development →	
Review and Updating of Evaluation Methodology →	-Evaluation
Chart Acceleration Analysis →	

Inputs. With the decrease in the number of content skills and the development of learning packages, a corresponding decrease in the number of program developers can be made. Specifically, two for each system area or six total should be adequate. This modification would increase the cost-efficiency per trainee and still maintain the effectiveness level.

A larger number of diffuser trainees with more diverse ethnic backgrounds can be used with the six developers. It is recommended that the program include ten of these trainees with stipends lucrative enough to recruit academically able students with ethnically and experiencially diverse backgrounds. This number would allow the development of special seminars and regular academic programs for maximum training impact.

Similarly, a larger number of practitioner trainees with more diverse ethnic and geographic backgrounds are needed to test the applicability of the training model. It is recommended that 40 of these trainees be included in the program. This would give a four to one ratio of practitioners to diffuser trainees which seems to be an ideal relationship.

Throughputs. The primary modifications in this area relate to timing, emphasis and deletions. As previously mentioned, the diffuser trainees were not adequately trained before they were expected to perform in the Intensive Training Conference which was held in August. To increase the conceptual and skill training of the diffuser trainees, it is recommended that the Intensive Training Conference be held in January or between semesters. This would allow for adequate training of the diffusers, for development of the learning packages, and more careful recruitment of practitioner trainees.

Additionally, the Intensive Training Conference should be shortened from nine to six days. For example, the workshop could start on a Sunday afternoon and meet through the following Saturday.

The pre- and in-service workshops would be held in the districts only as they were requested by the district practitioner trainees. The primary thrust in field activities would be made with technical assistance by the diffuser trainees. This diffusion technique seemingly was perceived as being the most positive. Technical assistance by the diffuser trainees should occur on weekly basis to maintain the interest of the practitioners for planning and innovation.

A recommended addition to this phase of the model would be resident short mini-lab workshops for the developers, the diffuser trainees, and the practitioner trainees. These would be held in a retreat atmosphere on a weekend to reinforce waning motivations and to plan further activities. Two of these conferences should be held. The first should be in the middle of the spring semester to assist in the closing school year activities. The second should be early in the summer to plan further district activities and a debriefing for project evaluation.

Finally, the academic programs for the diffuser trainees should be more focused and complementary to other diffusers. For examples, three major thrusts seem consistent with this model--administrative operations research or systems analysis, human relations and organization development,

Table 22

Revised Process Phase of the Training Model

Inputs ⟷	⟷ Throughputs ⟷ Training Activities	⟷ Outputs
R & D Program Developers	Content Planning by Developers	R & D Development Team
	Preliminary Program for Diffusion Trainees (Fall Semester)	
	District Problem Definition (Fall Semester)	Experienced R & D Diffusers with Advanced Degrees
	Resident Intensive Training Conference (Between Semesters)	
R & D Diffuser Trainees	Resident Short Mini-Lab Conferences (Mid-Semester and Summer)	
	Technical Assistance Weekly	Practitioners with Operational R & D Skills
R & D Practitioner Trainees	Pre- and In-service Workshops (as requested)	Training Packages
	Focused Academic Program for R & D Diffuser Trainees	Problem Solving Through Application of R & D Skills
	Field Experience for R & D Diffuser Trainees	

and traditional evaluation methods. The specialization in these areas would complement each other in the form of diffusion teams to work with practitioners in the field.

Outputs. The material outputs will be tested learning packages in the planning, changing, and evaluation system components. The personnel outputs will be highly trained and experienced diffusers, a development team, and practitioners solving problems in the field with new R & D techniques.

In summary, the revised content training phase is designed to produce a coordinated unit of practitioners, diffusers, and developers who can operationalize the systems approach to problem solving. To build a cohesive team, three levels of R & D personnel are selected for an intensive resident conference where they learn together by designing alternative solutions to their own school district problems, using the R & D content skills. To insure that the problem solutions are implemented, a series of follow-up activities is designed for use in the participating school districts. The revised process phase is presented in Table 22.

Conclusion

The high potential for benefits accruing to graduate-level, teacher-education institutions and school systems indicates that this training model will be well accepted. The benefits to teacher-education institutions include both improved relationships with other areas of the campus as a result of the interdisciplinary cooperation and also greater respect and working arrangements with school districts as a result of developing basic sciences into technology and demonstrating its usefulness in problem-solving situations. The benefits to the school district include the improvement of management methods with an emphasis on future planning so that the schools can act instead of merely reacting to environmental pressures.

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A P P E N D I X A

Problem Solving Plans and Procedures Developed
by Turner, Kansas U.S.D. 202

A. Problem Identification.

The first stop in the identification involved the brainstorming of a list of underlying causes for the problem of apathy in the school. The list included these items:

1. Irrelevancy of curriculum
2. Time allotments
3. Physiological factors
4. Fatalism
5. Lack of cultural experience
6. Restriction - physical plant
7. Student awareness of need
8. Environmental drag
9. Sociotal pressures
10. Downgrading teaching methods
11. Resolution of Staff-student conflict
12. Regimentation
13. Staff expectation
14. Lack of humanism
15. "Sour grapes" attitude
16. Lack of student-set goals
17. Restrictive school setting
18. Staff apathy
19. Present day conditions

B. PERT Chart of Planned Activities (Presented in a time-sequence format)

0. Start
1. Review projects for reducing apathy - Juniper Gardens, Individualized Instruction, humanization (De Charmes), Hugoton-Conway Springs project, Schools Without Failures, precision teaching, Merry Wong's program as exemplified by science program, Steve McClure (Title III Project).
2. Devise plans for reducing apathy
3. Consider diagnosis in other areas such as academic failure, humanization, communications
4. Develop priorities among causes
5. Discover most useful technique
6. Allow for review of progress
7. Overall stratogy
8. Inform superintendent
9. Inform board
10. Inform elementary communication
11. Teacher orientation for involvemen
12. Student orientation for involvement
13. Community orientation
14. Establish committees
15. Diffusers and developer involvement
16. Coordination committee - US - Feedback
17. Nine-week evaluation
18. One page summary to board
19. Motivation and instruction task force
20. Develop further plans for Strut
    a. Turner High School (THS)

b. Pierson Junior High School (PJS)
c. Highland Junior High School (HJS)
d. Central Office

21. Strut (Student-Teacher Relationships Underlie Trust) Alpha Meeting--11-28-72
22. Summarize Survey Results and Redistribute to Alpha Committee with diffusers assistance to THS, PJH, HJH, and Central Office staffs.
23. Coordinator Summarizes and Incorporates into Strut Written Summary as "Pre" Project Data
23a. Separate PERT for K.U. extension course.
24. Summarize Grade Data Distribute to Alpha Incorporate into Strut Written Summary as "Pre" & "Progress" Data (Item 3A C.H. 11-24-72) (Diffusers Assist)
25. Summarize ITBS & TAP Test Data Distribute & Incorporate (Item 3B C.H. 11-24-72) (Diffusers Assist)
26. Summarize Absenteeism Data Distribute & Incorporate (Item 3C C.H. 11-24-72) (Diffusers Assist)
26a. Separate PERT--Teacher Contracts
27. Written Progress Report Regarding Staff - Student Advisory Committees Distribute & Incorporate (Item 2A,B,C (C.H.) 11-24-72)
28. Strut Coordinator Incorporate #27
29. Strut Alpha Meet

C. Specific Implementation Activities

1. Rap Session
   a. Implementation - A regularly scheduled time for a group of staff-students and principal to meet before or during school and discuss concerns over some form of refreshments. We suggest this be done by grade level with sessions composed of three staff members and nine students on a continually changing weekly basis.
   b. Output - We feel this will increase trust, enable better acquaintances among students, staff and principal. The teachers selected will invite three students, one whom she feels is the top of one of her classes (a leader), one who might be a problem, and a third who does not have much interaction in her classroom (isolate). The invitation by the teacher should be given at least two days in advance and given in a face-to-face situation.
   c. Evaluation - (Teacher): A questionnaire which will measure pre and post evaluations of staff-student feelings by staff. Student: Decrease in number of student-teacher conflicts (personal) recorded by the student to the counselor.
   d. Cost Effectiveness:

2 doz. donuts/week	= $2.00 x 36	= $72
Milk and coffee	= $1.00 x 36	= $36
		$108

2. Individualized Instruction
   a. Implementation: Teacher will first need to determine the students ability by the use of Gum folder information and Card X of students who are identified as needing special help. The student with the help of teacher will determine where the student will be by the end of a nine week period in terms of the

students and teachers pre-set goals. According to students ability, teacher and student will determine content levels to be achieved.

b. Output: A positive effect in student grades should be noted as compared to previous years grades.

c. Evaluation: Daily charting of correct and incorrect answers on daily assignments. Nine week measures will be the number of students who better their grades in the individual subject areas.

d. Cost: Teacher training to achieve individualized instruction methods and charting techniques.

3. Student Advisory Groups
   a. Implementation - Student-Administration Groups. Students advisory groups made up from a cross section from student body to meet with and advise the administrator of student concerns in areas of (1) curriculum, (2) social activities, and (3) time allotments (scheduling). The meeting will be scheduled once a month. The group reports to the council and the council carries the information to the classes.
   b. Outputs - Increased communication and awareness of student-administrator needs for change.
   c. Evaluation - Number of recommendations from the group implemented in part or whole and those rejected.
   d. Cost Effectiveness: The cost will depend on the items adopted which are suggested to the administrator by the group.
4. Grievance Committee

   We feel this carries a negative connotation and that concerns will be met in a more positive manner through the advisory group and the rap sessions.
5. Student Selection of Teacher Helper not yet developed.
6. Student Government

   All schools in the district have a functioning school governing body. These bodies were set up and amended through student participation. We believe they function well and unless advised to do so, we see no reason to change the present set up.
7. Student Assemblies
   a. Implementation - All students are encouraged to share their talents during the year with the student body. This is accomplished by both student talent shows and by plays and short skits including the Speech and Drama classes and the instrumental groups and vocal music classes. During the year all students with something they want to offer will have an opportunity to do so. In the 7-8th grades the students work out plays and present them to the other 7th-8th grade students.
   b. Outputs - Student origin feelings
      Closer student tie to school
      Student ego builder
      Student appreciation of peers
   c. Evaluation - Number of students who take part in school programs
   d. Cost - Time
8. Community Participation
   a. Implementation - Social (Visitation) and Resource (1) Teacher-administrator initiated parent visits, (2) Staff-parent play nights, (3) Administrator-parent lunch schedule to discus community and or individual concerns, (4) Parents of students with

knowledge or abilities and skills in any area of school life should be encouraged to share their experiences with the class or school as a whole.

b. Output:
(1) Closer school-community feeling of working together for the benefit of the student, (2) Increase the communities feeling of neediness by the school, and (3) Increase students' desire to have parents take part and be a part of school life.

c. Evaluation: Attitude questionnaire periodically

d. Cost - minimal

9. Building Improvements

Implementation - The general atmosphere of the school is reflected by the students and how they feel about the conditions around them. A long range plan is necessary in every school so that needed repair and remodeling can be taken care of. Students should be involved in suggestions and repair.

10. Student-Teacher Scheduling

a. Implementation: Have teachers and students from each grade meet in an assembly to get student inputs and let the students know we can do what they think.

b. Output - Greater acceptance of students' needs. Increase of student-school positive feelings.

11. Student Lounge

a. Implementation - An area where students have an opportunity to relax and communicate with peers. An area where refreshments could be purchased and faculty would not question the student's right to be there.
High School - Area from the south doors to the hall. This area is large enough to accommodate 30+ students and has facilities for either vending machines or student booths to sell refreshments. Music and benches along with overstuffed chairs would supply a lounge environment. This area is away from the academic area and would probably be the most usable space in the building with an open atmosphere.
Junior Highs - The cafeteria would be the most space but would present problems because of closeness to academic areas. The front hall could offer an area but would not lend itself to refreshment.

b. Output:
(1) Increase in student freedom, (2) Better utilization of study halls, (3) Increase by staff of student trust, and (4) Better recognition of student needs by staff.

c. Evaluation - Student questionnaire or Delphi

d. Cost - $300.00 for benches and music system

12. Administrator Empathy for Teacher Problems

a. Implementation - This could best be implemented initially in in-service or preschool orientation by verbally emphasizing administrator's concern for teacher problems. (Stress open door policy) This should be reinforced throughout the year in faculty meetings and in other more informal situations.

b. Output - Better staff interpersonal relations

c. Evaluation - Devise and administer a questionnaire to survey how you are perceived by your teachers as an empathic person toward their problems for all returning teachers to complete in the first week of school. Devise and administer a questionnaire to

survey how teachers perceive our administrators as having empathy for their concerns and problems.

This should be administered the first week of school and the same instrument administered again the last several weeks of school.

13. Activities for Social Improvement
    a. Implementation - Orientation of staff through preschool workshop. Opening assembly will be used to present to student body and to be reenforced by staff in the classroom.
       Social awareness program planned:
       1st quarter - Government and political awareness
       2nd quarter - Teacher-Student input
       3rd quarter - Teacher-Student input
       4th quarter - Teacher-Student input
    b. Output - Improve student awareness through special activities and involvement
    c. Evaluation - Use of questionnaire and counting student and teacher reaction
    d. Cost - Special speakers - special materials as needed. $300.00 estimate
14. Teacher-Counselor Input
    a. Implementation - Discuss proposal (STRUT) with counselors before teachers report. Present proposal to staff in preschool workshop and seek their ideas and suggestions
    b. Output - Staff inputs to be used to help define the process. We must show teacher that their input is very important to the success of the program.
    c. Evaluation - Use of Delphi techniques. Use at least three checks. Use suggestions made to chart the input.
    d. Cost - Time

15. Use of Student Time
    a. Implementation - Survey present facility to determine possibility of better uses of existing space. Give consideration of relaxed study hall situation including refreshments. Consider establishment of satellite instructional materials centers.
    b. Output - Student attitude improvement, improved student achievement.
    c. Evaluation - Count and chart (1) improved attendance, (2) decreased vandalism, (3) academic progress, and (4) discipline improvement.
    d. Cost - Check cost of improvements and at close of year check for effectiveness of improvements. Details to be developed later.
16. Motivation and Instruction Task Force

This task group will meet 2/25/72 at 4:00 p.m. to discuss the implementation of an ongoing group to develop instructional philosophy and methodologies as they relate to motivation of students. Each of us will bring proposals about how to set it up and will share resources that we have.

A P P E N D I X B

Flow Chart for PLAN 368,
Paola School District

Monthly Sequence for Projected
Activities in PLAN 368

August, 1972

A. R & D Practitioners, Diffusers, and Developer Teams Workshop in Lawrence, Kansas.

B. Task Team reports to Superintendent on the plan of action--Plan 368 on August 21, 1972.

C. Make request for any financial assistance

D. Share Workshop information on R & D techniques with the elementary staff on August 22, 1972.

E. Performance objective team

F. Suggest the possible tentative plan now awaiting Board of Education action

G. Board of Education acceptance and approval of Plan 368 and finance funds

H. Questionnaire prepared

I. Questionnaire on staff opinions on area to be studied

J. Notify publication Co. of study intention and request material

K. Task team meeting and review organization and feedback

September, 1972

A. First visit by state department advisory team.

B. Proposal formally presented to combine staff--probably written.

C. Formation of levels committee for initial study. Language Arts and Communication

D. First committee meetings to commence input for language arts only.

E. KU diffusers on site for first visit.

F. Provide list of available current literature for review

October, 1972

A. First news releases for community consumption on PLAN 368

B. Begin meetings with communications advisory team at all levels.

C. Listen to consultants in areas being studied, media, resource persons, and task team committee

D. Advise Staff on progress of PLAN 368--October 10, 1972

E. Performance Objectives of Workshop--State Dept of Education

November, 1972

A. Begin material selection study. Language Arts committees and communication team.

B. Begin the charting of PLAN 368 School/Community feedfack.

C. Task Team meeting for feedback report on PLAN 368.

D. Begin writing study and strive toward staff acceptance and approval of all levels of performance objectives in Language Arts

E. State Dept. Visitation consultation of specific area

F. Visit Manhattan Project

December, 1972

A. KU Diffusers on site.

B. State Department consultants on site.

C. Continue materials selection study with goal of recommendations for 1973-74 term

January, 1973

A. Completion of all levels of performance objectives

B. Task Team meeting to compile all level objectives

C. First formal report of communication team to receive all input

February, 1973

A. Objectives typed and first publication of the Language Arts objectives only

B. Complete any revisions recommended for review and get them approved

C. Finalize any materials selection

March, 1973

A. Text adoption report to Board of Education

B. Compile Language Arts K-12 performance (behaviorial) objectives

C. Task Team study of data collected on PLAN 368

D. Organizational and Facilities questionnaire prepared

April, 1973

A. Task Team recommendation to Superintendent and Board on next steps in PLAN 368

B. Team reorganization

C. Budget recommendation

D. Organization and facilities questionnaire distributed and collected for tabulation

E. Evaluation procedures for Language Arts

May, 1973

A. Identify curricular area for intensive study for 1973-74 term

B. Form tentative committees or teams for added curricular and district organization study

C. Begin to finalize evaluation procedures in Language Arts

A P P E N D I X C

Plan for Coordinating Curricular Activities
in the Northwest Attendance Area

A. Overall Plan
   1. Identify Activities
   2. PERT Project Activities
   3. Implement Phase I
   4. Implement Phase II
   5. Design and Implementation of Corrective Strategies Phase III
   6. Evaluate the Plan
   7. Phase IV--Present Model and Generalize to Total District
   8. Phase V--Apply to District

B. Goal
   To develop a systems approach to improvement and coordination of instruction at Rhein Benninghove, Trailridge Junior High and Northwest High School that would be applicable district wide.

C. Suggested Activities for Goal Attainment
   1. Student Records
      a. Identify pertinent information
      b. Design a means of transferring records
      c. Develop a system to disseminate information to teachers.
   2. Interbuilding Coordination
      a. Joint planning by administration and building staffs
      b. Facilities sharing
         (1) identify skills
         (2) prepare list of skills
         (3) communicate skills
   3. Coordination of Instruction
      a. Use of curriculum directors in K-12 conferences
      b. Develop K-12 sequence of skills
      c. Joint inservice in instruction
         (1) individualized instruction
         (2) evaluation design (formative)

D. Data Based Inventory Strategy
   1. What Data Do We Now Have?
      a. SRA reading scores in 5th grade
      b. standard achievement scores
      c. grades
      d. attendance
      e. health data
      f. work habits
      g. socio-economic level
      h. IQ scores
      i. OVIS, PSAT, SAT, DAT, etc.
      j. mobility
   2. Additional Data Needed
      a. student attitude survey
      b. teacher opinion survey
         (1) exit performance level
         (2) entrance data desired
      c. administrator attitudes
      d. parent perceptions
   3. From Whom Do We Collect?
      a. students
      b. parents

c. teachers
d. administrators

4. Who Should Be Involved in the Collection Process?
   a. students
   b. parents
   c. teachers
   d. administrators
   e. specialists
   f. counselors

E. Design and PERT of Data Collection Plan Relative to Coordination (Presented in a time sequence format)
   1. Brainstorming
   2. Identify areas of time and responsibility
   3. Identify task force
   4. Structure interviews
   5. Conduct interview
   6. Analyze interview input
   7. Build instrument
   8. Check data processing
   9. Review instrument
   10. Check district policy on questionnaires
   11. Identify sample
   12. Administer questionnaire
   13. Tabulate and rank
   14. Proceed to next activity - Phase II
   15. Convene task force
   16. Look at data two sources
   17. Identify problem areas
       a. information flow
       b. orientation
       c. coordination of instruction
   18. Devise strategies for attacking problems identified
   19. List strategies with responsibilities
   20. Plug in strategies
   21. Identify ways of evaluating strategies
   22. Identify resources
       a. personnel
       b. financial support
   23. Phase III
   24. Survey all technologies applicable
   25. Phase III Design and Implementation of Corrective Strategies
       Evaluate
   26. Phase IV Generalize to District
   27. Phase V Apply to District

F. Questionnaire and Survey Results

To: Northwest Faculty
Subj: Information Needed on Junior High Students
Date: January 4, 1973

We are now concentrating on information junior high schools could supply us with that would be most helpful and the teaching areas that want certain information. Provided is the result of the last questionnaire.

Please place a circle around the number in the collumn that most nearly indicates your needs for the adjacent information.

What information would you use if available in an IBM print out (grades, skill levels, test scores, etc.)?

	Items	Results by Response Category			
		Strongly Agree	Agree	Dis-agree	Strongly Disagree
1.	Name	48	3		
2.	Address and zip code	45	4	2	1
3.	Telephone	42	8		1
4.	School from	24	15	8	2
5.	Complete Class Schedule	33	12	3	1
6.	Junior High School grades	15	13	11	9
7.	Physical Condition				
	a. disabilities	28	14	4	1
	b. epileptic, etc.	24	11	4	1
	c. hearing defect	24	13	4	1
8.	General Test Scores	17	17	11	4
9.	Skill Scores	16	16	14	3
10.	Skill level for Individualized study	22	17	5	2
11.	Disabilities or learning problems	24	14	8	1
12.	Reading Scores	20	15	7	3
13.	Reading level	25	16	3	3
14.	Past academic record	9	14	17	6
15.	Grades following each semester	5	15	19	5
16.	First year in school	5	16	18	4
17.	Courses completed	10	18	13	2
18.	Current Courses	12	18	12	3
19.	Teacher's reports	8	13	18	9
20.	Student's goals for certain class	10	14	16	4
21.	Advisory teachers	11	24	9	4
22.	Activities	11	21	13	3
23.	Hobbies	9	21	12	4
24.	Identification	7	17	11	3
25.	Absences	15	18	8	5

A P P E N D I X D

Flowchart and Opinionnaires Developed
by the Career Education Task Team

A. Flowchart of Activities

		Number of participants involved	
1.	Inservice training program skills taught to staff)	90	
2.	PERT, Flowcharting and Systems Analysis used in bi-monthly project meetings of Industrial Arts, Home Ec. and Business Ed. Staff	145/mo	
3.	Student Teacher Feedback sessions	198/mo	
4.	Career Ed. Development Project funded $5,000 from state	2	
5.	Career Ed. Individual school projects funded	Northwest 5 Hillcrest 5 Indian Hills 5 S.M. East 5 Trailridge 5 25	to teach 250
6.	Facilities Planning committee established	105/mo	
7.	Human Relations Skills exercise	73	
8.	Career Ed. Workshop	6	
9.	Career Ed. Workshop	36	
10.	Career Ed. Workshop	4	

11. A career education Attitude Survey has been developed and administered to all teachers in the Shawnee Mission school district.

12. A career education Opinionnaire has been developed and administered to all 10th, 11th, and 12th graders in the school district.

B. Career Education Opinionnaire Number 1

PERSONAL DATA: Please check the response that is true for you.

1. My grade level in school is _____ 10th _____ 11th _____ 12th

2. Sex: _____ Male _____ Female

THE FOLLOWING QUESTIONS CONCERN THE CAREER CHOICES YOU MAY NOW OR VERY SHORTLY BE MAKING. YOUR ASSISTANCE IN RESPONDING TO THESE ITEMS WILL HELP DETERMINE THE STATUS OF CAREER EDUCATION IN SHAWNEE MISSION.

3. Which of the following best describes your work experience?
   _____ I have worked in the past but I am not now employed.
   _____ I have never worked for pay.
   _____ I am currently employed for pay.
   _____ I am looking for employment now.
   _____ I am enrolled in the Office Education Work Program.
   _____ I am enrolled in the Distributive Education Work Program.
   _____ I am enrolled in the Trades and Industries Work Program.
   _____ I work for my father (mother) for board and allowance.

4. If you are currently employed, which of the following best describes your job?
   _____ I am a retail sales clerk in a small store employing 10 or less.
   _____ I am a retail sales clerk in a large store employing more than 10.
   _____ I work as a door-to-door salesman.
   _____ I work in food service or food preparation (example: SMAK'S, PUTSCH'S).
   _____ I work in automotive service (Service station, car wash, car dealership).
   _____ I work for a lawn or landscape service company.
   _____ I am self-employed as a _____ (Please describe briefly)
   _____ Other: _____ (Please take a moment to describe)

5. Which of the following courses have you taken or are you now taking?
   _____ Typing
   _____ Shorthand
   _____ Business Machines
   _____ Clerical or Secretarial Practice
   _____ Bookkeeping or Accounting
   _____ Office Education Work Program
   _____ Distributive Education (Marketing and Retailing) Work Program
   _____ Careers Unit in Unified Studies (where Careers Notebook was constructed)
   _____ Introduction to Business
   _____ Business Math
   _____ On-the-Job Training for credit
   _____ Woodworking
   _____ Metal Shop

CEQ #1

5. Continued
   _____ Trades and Industries Work Program
   _____ Auto Mechanics or Technology
   _____ Agri-Business
   _____ Other: Please list any other career-oriented course you have taken or are taking _____

6. How times have you talked with a school counselor about your career plans?
   _____ Once
   _____ Twice
   _____ Many Times
   _____ I have never talked with my counselor about my career plans.

7. Have you ever had the opportunity to take an interest test or career attitude survey at school or elsewhere?
   _____ Yes
   _____ No
   _____ Maybe. I took some type of interest test once.
   _____ Other: Please describe _____
   _____

8. Which of the following best describes your career plans at this time?
   _____ I have given a great deal of thought and planning to choosing my life's occupation. The choice I have made is: _____
   _____
   _____ I have thought some about my career plans, and have talked with people about them, but I have not selected one occupation over others at this time.
   _____ I have given little or no thought to what I might do after high school.

9. If you have thought about your career plans and talked with others about them, which of the following have been most helpful?
   _____ My parents
   _____ An adult acquaintance or friend
   _____ My counselor at school
   _____ My employer
   _____ My teacher(s)
   _____ A friend(s) my own age
   _____ Other: Please describe _____

10. Which of the following definitions do you believe best describes "Career Education?"
   _____ "Career education refers to those courses that prepare a student to leave school upon high school graduation and earn a living."
   _____ "Career education includes all education at every level of school that prepares an individual to plan for or follow an occupation or career. This may include anything from brick laying to medicine."
   _____ "Career education is best defined as a specific course offered to high school or junior high school students to learn about possible choices."

CEQ #1

11. Rank the following occupations in order of your preference.

_____ Florist
_____ Restaurant Manager
_____ Politician
_____ Office Manager
_____ Salesman
_____ Medical Lab Technician
_____ Television Announcer
_____ Bricklayer
_____ Machinist
_____ Auto Mechanic
_____ T. V. Repairman
_____ Fireman

12. Assuming the following were the only available occupations, rank 1 through 10 in order of your preference.

_____ Landscape Architect
_____ Dietician
_____ Lawyer
_____ Certified Public Accountant
_____ Personnel Manager
_____ Physician
_____ T. V. Journalist
_____ Civil Engineer
_____ Mechanical Engineer
_____ Automotive Design Engineer
_____ Electrical Engineer
_____ City Manager

13. List in order of preference three occupations not listed in items 11 and 12 that are of interest to you in making a career choice.

1. _____
2. _____
3. _____

14. In your opinion, which of the following factors are most important for occupational success? (Please rank them 1 through 10).

_____ Reading Skills
_____ Personality
_____ Punctuality
_____ Computational (math) Skills
_____ Appearance
_____ Honesty
_____ Writing Skills
_____ Speaking Skills
_____ "Political Pull"
_____ Perseverance

CEQ #1

15. In your opinion, which one of the following statements best describes why people work?

_____ People like to serve others
_____ People need and like the money
_____ Many jobs offer prestige and social status
_____ Most people need something to do
_____ There is personal growth in work
_____ Society demands it
_____ We have a moral obligation to work
_____ Most people like to keep busy
_____ Other: Please describe _____

_____

CONCLUDING THIS OPINIONNAIRE ARE 3 "OPEN-ENDED" QUESTIONS, PLEASE RESPOND HONESTLY

16. At age 25, what would you like to be doing to make a living?

17. What 5 occupations do you think will receive the greatest emphasis in the next few years? Explain your reasons for choosing them.

1. _____
2. _____
3. _____
4. _____
5. _____

18. What things do you especially like or dislike about the job you now have?

19. What one course do you feel has been the most valuable to you?

C. Career Education Survey Number 2

Professional Staff and Community

Introduction:

For most of the 20th Centruy, public education in America has been committed to the goal of meeting the needs of all American Youth. Emphasis has been placed on providing educational alternatives based on personal interest and capability.

During the past decade, however, rising levels of technology and emphasis on scientific competition during the "Sputnik Era" dwarfed all other concerns and led to unparalleled pressure on young men and women to "go to college." Far too often the popular insistence on "getting a college degree" was made at the expense of career considerations based on ability and interest. The dignity of work and the interdependence of work at all levels of the economic system was tragically understated or ignored.

Pride and personal satisfaction derived from meaningful work seemed near extinction.

The result is history--our youth were inadequately prepared for the economic and social turbulence of the 1960's; appreciation for the genius of the American economic system was at an all time low; a surplus of college and university graduates occurred simultaneously with shortages in many critical service and skilled work occupations.

Vocational training with varying degrees of success has been provided for the high school and post high school student for several decades. In fact, the development of "saleable skills" and economic understanding were among the earliest goals articulated for comprehensive education. The need today is for an integration of the academic and vocational preparation of students into a concept of education that breathes new life into the objective of successful preparation and development of a lifelong, productive career.

That educational concept, incorporating the historically-important public school goals of academic and vocational preparation, is appropriately called CAREER EDUCATION. Under the Career Education concept, all students will be provided with four alternatives upon graduation from high school: entry into the job market with a reimbursable skill; enrollment in a trade school; enrollment in a community college for the purpose of obtaining a technical degree; enrollment in a community college or four-year college or university for the purpose of obtaining a professional degree.

Career Education is the total effort of the school, the home, and the community to teach the value of work as a meaningful and satisfying activity, and to assist young men and women in selecting career choices in keeping with interests and abilities.

Personal Information:

Professional Educators (administrators, teachers, etc.):

_____ Male

_____ Female

_____ Elementary _____ Grade Level

_____ Junior High School _____ Subject Area

_____ Senior High School _____ Subject Area

For Community Participants:

_____ Male

_____ Female

Occupation: _____

CEQ #2

CAREER EDUCATION ATTITUDE SURVEY

Career Education is the total effort of the school, the home, and the community to teach the value of work as a meaningful and satisfying activity, and to assist young men and women in selecting career choices in keeping with interests and abilities.

INSTRUCTIONS FOR COMPLETING THE SURVEY:

Assuming the above definition of career education, please circle the response that most nearly approximates your feeling about the statement.

SA	(Strongly Agree)
A	(Agree)
N	(No Opinion or Neutral)
D	(Disagree)
SD	(Strongly Disagree)

1.	All students in high school need more help in setting career goals than they now receive.	SA	A	N	D	SD
2.	In the early primary grades (K-3) children should be made aware of different kinds of work and their importance.	SA	A	N	D	SD
3.	Students should be encouraged to select a career as early as the 7th or 8th grade level.	SA	A	N	D	SD
4.	Every classroom teacher should emphasize the importance of work as personally meaningful and satisfying.	SA	A	N	D	SD
5.	Basic attitudes toward work and productivity are developed in the home.	SA	A	N	D	SD
6.	School associations have the most influence on the choice of a career or occupation	SA	A	N	D	SD
7.	School counselors help students a great deal in making educational plans.	SA	A	N	D	SD
8.	The work community (private and public employees and labor organizations) should do more to provide work experiences for youth.	SA	A	N	D	SD
9.	Family experiences are the major influence on career aspirations.	SA	A	N	D	SD

CEQ #3

SA = Strongly Agree
A = Agree
N = No Opinion or Neutral
D = Disagree
SD = Strongly Disagree

10.	Most high school students can make career choices on their own.	SA	A	N	D	SD
11.	School counselors help students a great deal in making occupational and career choices.	SA	A	N	D	SD
12.	Schools at all levels (K-College) need to expand vocational training.	SA	A	N	D	SD
13.	There is too much emphasis on obtaining a college or university degree.	SA	A	N	D	SD
14.	Every high school student should be required to study consumer economics.	SA	A	N	D	SD
15.	There should be greater emphasis on reading, writing, and math.	SA	A	N	D	SD
16.	There is too much emphasis on vocational preparation for young people.	SA	A	N	D	SD
17.	"Career education" is just another name for vocational education.	SA	A	N	D	SD
18.	A career education program should help a student recognize the wide range of occupations available.	SA	A	N	D	SD
19.	Social skills are very important to success in the working world.	SA	A	N	D	SD
20.	Career education is important for all students and emcompasses all occupational areas of interest.	SA	A	N	D	SD
21.	All young people should be enrolled in classes that explore career opportunities.	SA	A	N	D	SD
22	At high school graduation, every student should be able to select an occupation consistent with his interests and abilities.	SA	A	N	D	SD
23.	Parents, teachers, and counselors need to work together to help students make enlightened career choices.	SA	A	N	D	SD

CEQ #4

SA = Strongly Agree
A = Agree
N = No Opinion or Neutral
D = Disagree
SD = Strongly Disagree

24. Students need an opportunity to begin career preparation in a broad area rather than a specific vocational field.	SA	A	N	D	SD
25. All students could profit from regular work experience along with their studies.	SA	A	N	D	SD

A P P E N D I X E

Attitudinal Evaluation Instruments

Post-Meeting Questionnaire for Task-Teams

Task-team _____
Date _____

Circle the number which best represents your response to each of the following questions.

1. How clear were the group's goals in this session?
   not at all clear 1 2 3 4 5 6 7 very clear
2. How much influence did you feel you had on the decision-making in your group?
   very little 1 2 3 4 5 6 7 very much
3. To what extent did the members of your group provide direction and structure to the group decision-making process?
   not at all 1 2 3 4 5 6 7 very great extent
4. To what extent were the members of your group considerate of the feelings & needs of other members of your group?
   not at all 1 2 3 4 5 6 7 very great extent
5. How did the group handle conflicts & differences of opinion?
   avoided & suppressed 1 2 3 4 5 6 7 accepted & worked through
6. To what extent were members open & leveling with each other about their thoughts, feelings, & attitudes?
   not at all 1 2 3 4 5 6 7 very great extent
7. How would you characterize the intellectual level of problem-solving in your group?
   routine, flat, illogical 1 2 3 4 5 6 7 creative, logical, critical
8. To what extent were group members committed to the group's decisions?
   not at all 1 2 3 4 5 6 7 very great extent
9. How much progress did the group make toward its ultimate goal?
   very little 1 2 3 4 5 6 7 very much
10. Overall, how satisfied were you with your group?
    very dissatisfied 1 2 3 4 5 6 7 very satisfied
11. How well did your group utilize the resources available at the workshop?
    very poorly 1 2 3 4 5 6 7 very well

Intensive Training Conference Evaluation Form

Listed are some statements often made in describing management training programs. In each case please check the appropriate statement that fits your perceptions of the August R&D Management Training Program.

1. I have begun to view my work problems in a more analytical and logical way as a result of this program.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

2. This program did not give me what my organization expected me to get out of it.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

3. The program helped me a great deal to learn interpersonal and human relations skills useful to me in my present job.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

4. In general the course content was too theoretical and of little practical value to me.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

5. The program was too long in relation to the benefit I derived from it.
   ( ) I feel this it true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

6. Quite a few of the participants seemed to lose interest during the latter part of the program.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

7. The staff seemed poorly motivated and uninterested in the success of the program.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

8. I feel that the program made a significant contribution to my personal growth.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

9. The program did not provide me with what I was personally looking for.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

10. Some of the participants were not properly motivated.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

11. The program helped me solve specific management/leadership problems facing me at the time I attended the course.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

12. The course put too little emphasis on areas of management/leadership that are of great practical value for me.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

13. The course broadened my outlook by helping me to understand problems on other areas of responsibility in my system.
   ( ) I feel this is true to a great extent
   ( ) To a considerable extent
   ( ) To some extent
   ( ) To only a small extent
   ( ) I don't feel that this is true at all

14. One of the weakest things about the program was the teaching material.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

15. One of the strongest things about the program was the teaching material.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

16. More time should have been spent in group discussion.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

17. I benefitted greatly from my personal relationships with particular instructors, trainers and staff members.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

18. The arrangements and living conditions during the program were less than satisfactory.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

19. This was the most significant training program I have ever attended.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

20. In general, the program was not properly organized.
( ) I feel this is true to a great extent
( ) To a considerable extent
( ) To some extent
( ) To only a small extent
( ) I don't feel that this is true at all

21. The faculty or staff really understood the problems faced by working administrators/group leaders.
    ( ) I feel this is true to a great extent
    ( ) To a considerable extent
    ( ) To some extent
    ( ) To only a small extent
    ( ) I don't feel that this is true at all

22. Are there any other comments that you would like to make about the program?

23. Do you have any suggestions for improving the program?

Content Model Evaluation Measure

Now we would like for you to indicate your perception of the value to you of various aspects of this R&D Workshop. Please check your judgment in the appropriate box to the right of each program element.

PROGRAM ELEMENT	Little Value	Moderate Value	Considerable Value	Great Value
1. Systems Approach				
2. Curriculum Planning				
3. Flowcharting, PERT & CPM				
4. Facilities Planning				
5. Charting & Trend Projection				
6. Delphi Technique				
7. Precision Classroom Teaching				
8. Cost Effectiveness				
9. Task Team Activity				
10. Interpersonal & Group Process Activities				
11. Curriculum Evaluation				
12. Strategies for Planned Change				

Organizational Climate Measure (OCM)

For the purposes of out study, it will help us greatly to have some information about your organization. The following set of questions ask some of your perceptions and observations about the organization in which you are now working. If you are not certain as to how any of these questions apply to your organization, then please give your BEST ESTIMATE. If you feel that an answer needs to be clarified feel free to make comments in the margins.

1. Does your organization have a systematic scheme for the selection and promotion of personnel in the system?
   ( ) Yes, we have an elaborate scheme
   ( ) Yes, we have some scheme
   ( ) No, but one is being planned
   ( ) No, we really have no scheme

2. How free and open is the interpersonal communications among administrators/teachers in your organization?
   ( ) Very free and open
   ( ) Somewhat free and open
   ( ) Not too free and open
   ( ) Not at all free and open

3. Does your organization make use of cost/benefit analysis or other advanced techniques in making financial and budgetary decisions?
   ( ) Yes, definitely
   ( ) Yes, in some cases
   ( ) No, but we are planning to do so
   ( ) No, not really

4. To what extent do administrators/teachers at various levels in your organization participate in decisions which affect them?
   ( ) To a great extent
   ( ) To some extent
   ( ) To a small extent
   ( ) Hardly at all

5. Does your organization have any organized program for the training and development of its administrators/group leaders?
   ( ) Yes, quite a bit
   ( ) Yes, some
   ( ) No, but training is being planned
   ( ) No, we really don't have any

6. To what extent does your organization pressure individuals for top performance?
   ( ) Considerable pressure
   ( ) Moderate pressure
   ( ) Mild pressure
   ( ) Almost no pressure at all

OCM Continued

7. Does your organization have a functioning appraisal system or performance evaluation procedure to be used in connection with personnel decisions?
   ( ) Yes, an extensive one
   ( ) Yes, a modest one
   ( ) No, but one is being planned
   ( ) No, we really do not have one

8. Has your organization introduced any modern techniques of perdicting student achievement?
   ( ) Yes, many applications
   ( ) Yes, some applications
   ( ) No, but we are planning to do so
   ( ) No, none have been introduced

9. To what extent do you think that top administrators are considerate of the feelings of people in your organization?
   ( ) To a great extent
   ( ) To some extent
   ( ) To a small extent
   ( ) Hardly at all

10. To what extent does your organization make use of outside consultants in the ordinary course of affairs?
   ( ) Frequently
   ( ) Occasionally
   ( ) Seldom
   ( ) No, we do not use consultants

11. How free are you to set your own performance goals?
   ( ) Very free to set my goals
   ( ) Somewhat free
   ( ) Not too free
   ( ) Not at all free--others set goals

12. Does your organization have specialized research and development groups working on new methods, long-range planning, or policy?
   ( ) Yes, a great deal of "R & D" activity
   ( ) Yes, some
   ( ) No, but "R & D" is being planned
   ( ) No, we really have no such groups

13. Are there lots of conferences and group discussions for the purpose of making decisions in your organization?
   ( ) Yes, many such meetings
   ( ) Yes, quite a few
   ( ) Occasional meetings
   ( ) We seldom or never have such meetings

OCM Continued

14. Does your organization make use of a quality control system whereby performance indicators are used for continuous feedback and review?
    ( ) Yes, to a great extent
    ( ) Yes, to some extent
    ( ) No, but we are planning to do so
    ( ) No, we really don't do this

15. In general does your organization stimulate and approve of innovation and alternative programming?
    ( ) Yes, definitely
    ( ) Yes, somewhat
    ( ) To a slight degree
    ( ) No, not really

16. Does your organization do any systematic long-range forecasting in relation to its planning process?
    ( ) Yes, a great deal
    ( ) Yes, some
    ( ) No, but we are planning to do so
    ( ) No, we have none

17. Is your organization planning to introduce any new programs into the community.
    ( ) Yes, many are planned
    ( ) Yes, some are planned
    ( ) Only minor plans
    ( ) No plans for new programs

18. In general, do you feel that job performance is the major criterion for promotions among administrative/teacher personnel?
    ( ) Yes, to a great extent
    ( ) Yes, to a considerable extent
    ( ) Yes, only to some extent
    ( ) No, not really

19. To what extent do you feel that inter-department rivalry and conflict hampers effectiveness in your organization?
    ( ) To a considerable extent
    ( ) To some extent
    ( ) Only a little
    ( ) We have no such conflicts

20. Are things in your organization sufficiently well organized for people to carry out their duties promptly and efficiently?
    ( ) Yes, very well organized
    ( ) Yes, but improvement is needed
    ( ) No, only minimally organized
    ( ) No, hardly organized at all

OCM Continued

21. Is your organization anxious for administrators/teachers to make use of new knowledge gained in management courses?
    ( ) Yes, definitely
    ( ) Yes, somewhat

22. To what extent do the people in your organization get the necessary information to do their job properly?
    ( ) Great extent
    ( ) Large extent
    ( ) Small extent
    ( ) Hardly at all

23. How would you characterize the climate of interpersonal trust among personnel in your organization?
    ( ) Very high level of trust
    ( ) Considerable trust
    ( ) Some trust
    ( ) Little or no trust

24. Does your organization have a planned program for organizational change and development?
    ( ) Yes, definitely
    ( ) Yes, to some extent
    ( ) No, but plans are being made
    ( ) No, we have no such plan

25. How willing is your top administration to spend money for management training and development?
    ( ) Very willing to spend money
    ( ) Somewhat willing
    ( ) Not too willing
    ( ) Not willing at all

26. Does your organization carry out or sponsor research?
    ( ) Yes, an extensive program
    ( ) Yes, some
    ( ) No, we plan to do so
    ( ) No, we do none of this

27. To what extent do you feel restricted by rules, policies and procedures in your organization?
    ( ) Not at all restricted
    ( ) Slightly restricted
    ( ) Quite restricted
    ( ) Very restricted

28. How much effort does your organization put forth for public relations and community interest?
    ( ) Great effort
    ( ) Moderate effort
    ( ) Small effort
    ( ) Hardly any effort