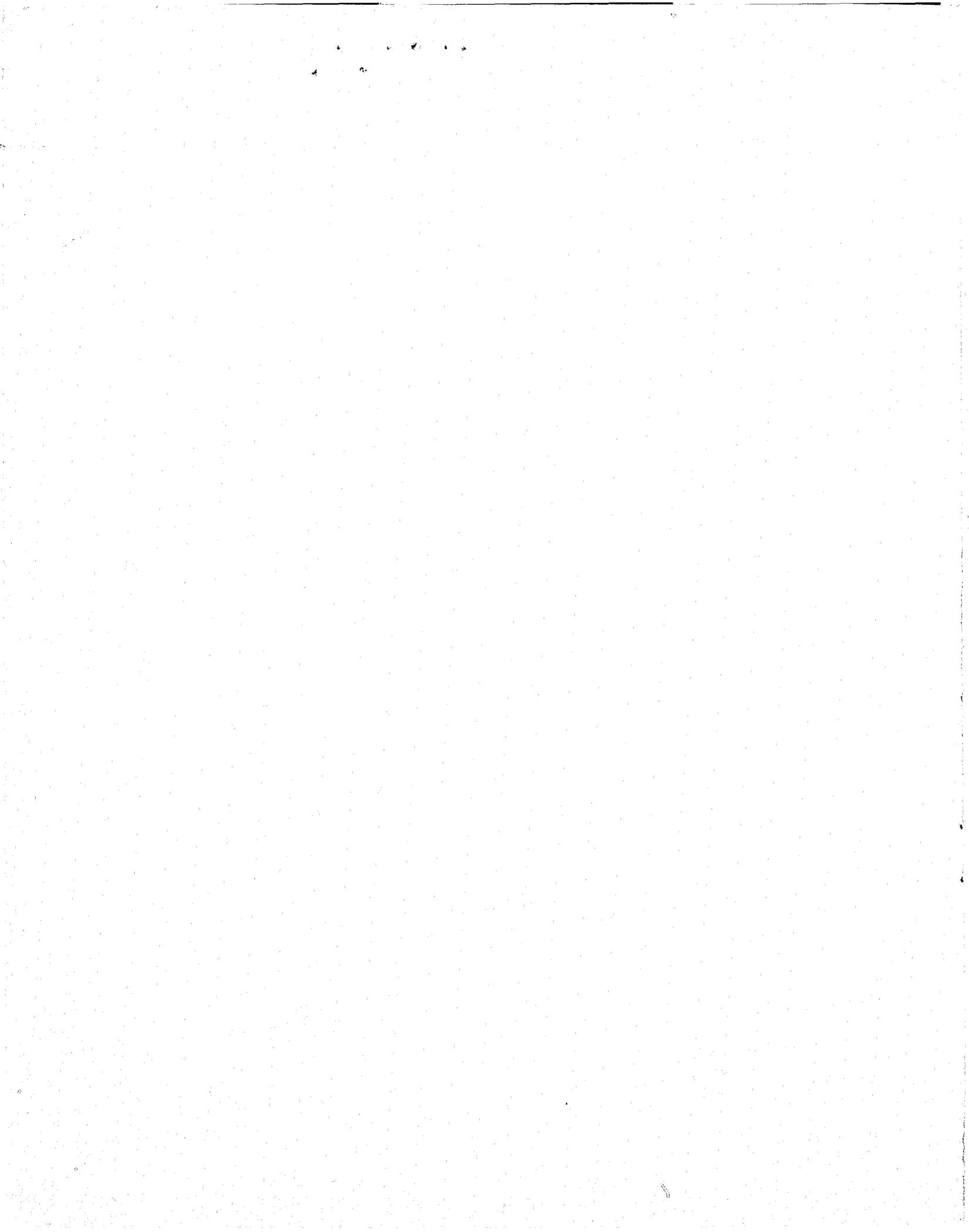INSTITUTE OF
CRIMINAL JUSTICE
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MONOGRAPH

New Directions in Criminal Justice Education: Training Change Agents for Entry-level Positions

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NEW DIRECTIONS IN CRIMINAL JUSTICE EDUCATION:

Training Change Agents for Entry-Level Positions

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in collaboration with Bonnie S. Wood

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DEDICATION

This monograph is dedicated to students at the University of Maryland who have participated in the Change Agent Training Program and who thereby enriched my understanding of change agentry while working from below.

FOREWORD

When six years ago, in the fall of 1971, Dr. Knowlton W. Johnson came to the University of Maryland, he had just completed his dissertation and his Ph.D. degree. As a young scholar, with boundless energy, he delved into teaching and research at this beginning of his independent academic career. From his previous mentors he seemed to place Professor Fairweather on the highest pedestal and spoke about social change and experimental social innovation. The first straws in the wind foreshadowing the experimental educational program, which is the topic of this monograph, were already discernible, although the form in which it appears here did not crystalize until about two years later. The present monograph is the result of six years of absolute dedication and uninterrupted work on a model of an educational program which has as its task the grooming of change agents for entry-level positions in the agencies of the criminal justice system.

The experimental educational model which Dr. Johnson undertook to develop and test has a very specific purpose, in a way a quite narrow objective. Its goal is not education of the students enrolled in the Criminal Justice and Criminology Program in the knowledge available in this field. Neither is its goal the development of generic research skills applicable to any problem in the field. Rather it is exactly what its name implies: education of workers in the field of criminal justice who are being prepared from the very beginning of their professional career to usher in changes which their mentor and they themselves believe to be desirable. The emphasis is on the fact that they are supposed to be working on this task while still on the lowest rungs of the career ladder and as rookies are lacking the power, the earned respect and confidence of their superiors and of the agency as a whole. In order to accomplish their task, their academic preparation must imbue them with a general perspective on the field of criminal justice, understanding of the agency in which they are to work, and a command of strategies and tactics for accomplishing their goals based on a thorough understanding of their position, their role, their function, and their limitations. Their academic course of study leading to a Bachelor's or a graduate degree must thus comprise two basic elements: classroom preparation, and contacts with operational agencies, especially the agency in which they are to work. Thus it evolves that, although, as I said, general education in the field of criminal justice and the appropriate generic research methodologies are not the purpose of Dr. Johnson's program, a considerable sophistication in both of these to the extent to which they are needed for the performance of the change-agent function is necessary. And Dr. Johnson always saw to it that only students who demonstrated their ability to grasp the theory and the methodology of the field enrolled in this program and carefully husbanded the further development of these attributes.

From this description the reader can readily see that Dr. Johnson's educational model implies tutorial handling of a very close personal nature of a relatively small group of students, not exceeding 12 or 14 at a time. It is several such groups of students that Dr. Johnson carefully selected, taught and tutored, and when they became employed in some agency in the field, further observed and guided. This intensely personal relationship between the "master and his disciples" is very clearly illustrated by Dr. Johnson's description, in Part 4 of this monograph, of the "Postgraduate Reinforcement". This refers to the practice of inviting all previous graduates of the program to become involved in the process of educating the new groups of beginners who are just starting. In these gatherings the graduates relate and analyze their experiences for the benefit of the neophites and their own. About 50% of all graduates have so far responded to such an invitation.

I would be remiss not to refer to the concept of change which underpins the change agent educational program. From my direct contacts with Dr. Johnson and his students I understand that the change which the program has in mind is not necessarily a change motivated by some political, social or economic ideology, but rather a change in terms of professional improvement of the operational criminal justice agencies; perhaps the simple formula, that in a rapidly changing society, institutions must continuously adjust to the new needs, technologies and capabilities of that society is the basis of the entire project. To mind come the observations of the pioneers in the study of social change, such as William Fielding Ogburn in his early work under this title, and Harry Elmer Barnes in his well-known text books. Both spoke of culture lag and frequently used the law and legal system institutions as star examples of resistance to social change and most conspicuous lagging behind the rest of the fabric of the given society. In terms of such analysis, efforts to identify the particularly damaging lags in the functioning of the criminal justice agencies and direct at least some of the educational programs explicitly toward eliminating such lags would appear to be a logical and extremely appropriate and important undertaking.

The reader's attention should be called especially to the section presenting the "Operating Principles for University-Based Change Agent Training", which appears in Part 4 of the monograph. This is the summary of the wisdom regarding his experiment which Dr. Johnson has distilled on the basis of the years of experience with it. And, indeed, these principles are quite essential and very well formulated.

Now that the work is published, what is needed are the comments, evaluations, criticisms and suggestions of others who have pursued similar objectives, and who concern themselves with educational policies in the field of criminal justice. If we remember the phenomenal growth of university programs in criminal justice education in the last decade, then it becomes more than obvious that the analysis, experimentation with and evaluation of what we are offering our students should be one of our main concerns. Dr. Johnson's commitment to one of the aspects of this task is well placed.

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PREFACE

Historically, college students have expressed a need for job-related curricula, a fact which is especially true of students in the field of criminal justice. On the other hand, most criminal justice educators of four years and graduate programs argue that an emphasis on job requirements of such roles as police officers, child care workers and the like, forces curricula to resemble that of training academies rather than educational institutions.

In light of the unsuitability of a training approach in the University, criminal justice educators currently emphasize varying combinations of professional and academic programs. Curricula that reflect a professional perspective emphasize broadening the background knowledge needed for personnel to make pragmatic decisions. Academic-oriented curricula, unlike training or professional curricula, are not designed to prepare students for field careers, but rather assume that the university should prepare young men and women for life rather than a particular occupation.

Contrary to current directions of most criminal justice educational programs, the experiment being presented entails testing an innovative training model which is designed to prepare college students for the difficult role of change agent in entry level positions. This change agent program (CAT) should not be viewed as merely a series of job-related courses, for its content also includes a professional and academic orientation. Its central focus is on training in areas of program development, evaluation research, and interpersonal skill development, all of which are linked to improving inadequacies in the field of criminal justice. The first goal of this experiment is to discover if a training model can be constructed which complements existing educational models. Second, this study is intended to stimulate other academicians to initiate new directions in criminal justice education.

It is not sufficient to create a totally new educational model which can be introduced in other academic communities. It must be a program of demonstrated effectiveness before it can be considered realistically by others. So, in addition to creating and implanting the CAT program, which consists of an entirely new set of educational experiences for college students, every dimension of the model has been carefully evaluated. A thorough presentation of the conceptual basis for the model, the evaluation strategy, and results are presented in four parts of this monograph.

Part 1 presents a conceputal framework and description of the study. Included in this discussion are the rationale for the program, the breadth of the training objectives, the scope and design of the experiment, and the evaluation strategy.

Part 2 presents the internal dynamics of the CAT program. Its three major components - formal course work, the classroom environment, and field research experiences - are described in detail. The uniqueness of these educational experiences is demonstrated by comparative data on participants of the CAT program and matched groups of students who are enrolled in the regular criminal justice program at the University of Maryland. Moreover, these data describe the dynamics of the program from the points of view of participating students and decision makers with whom students worked in varying criminal justice agencies.

The evaluation results are presented in Part 3. First, the development of the outcome measures is discussed to demonstrate the validity and reliability of the indicators which are being used to determine program impact. Second, multivariate data analysis techniques were used to uncover program elements which were found to be associated with program outcomes.

Part 4 presents the aftermath of the experimental stage. The postgraduation reinforcement component of the model is discussed, though it was not evaluated. Further, the status of the CAT program at the University of Maryland is discussed. Finally, a set of operative principles for change agent training and implications for further research are presented to illustrate the significance of experimentation in the search for new directions for criminal justice educators.

Knowlton W. Johnson
September 12, 1977

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PART I: A UNIVERSITY-BASED CHANGE AGENT EXPERIMENT

The Need For Change Agent Training

Recently Havelock and Havelock (1973:2) proposed, "We are slowly moving toward a new conception of a professional discipline concerned primarily with the process of change. It rests on the assumption that social progress can be planned and engineered so that it is more reliable and more beneficial to people." Partial evidence of this fact has been presented by Havelock (1973a), who synthesized and summarized relevant literature dealing with planned change from nearly 4000 sources. This work, together with such summaries by Rogers and Shoemaker (1971), Watson (1969), Lippitt (1973), and the works of Fairweather (1964, 1967, 1969, 1972) give ample testimony to the increased emphasis on change.

The field of criminal justice has not been overlooked by this development. Since the mid-sixties, federal, state, and local governments have allocated millions of dollars to be used in the quest for new solutions regarding crime problems in this country. During this time there has also been a substantial increase in the dissemination of knowledge which deals with change, either directly or indirectly. This rise in the amount of attention being given to the planning of change by government officials and policy makers has resulted primarily from society's concern with crime, from increased importance being given to protecting the constitutional rights of individuals, and from the development of skills in communication between criminal justice personnel and citizens.[1]

Not all changes are initiated from above. Criminal justice personnel with little authority to formulate policy are becoming more active in trying to alter organizational policies that affect operations and working conditions. Change activity from below can be best illustrated in police organizations where lower level officers have organized into fraternal organizations or unions. The intent of this action is to release organizational tension created by incompetent supervisors, rigid regulations, low salaries, etc. There are also numerous occasions where individuals such as patrolmen, counselors, or criminal justice planners attempt to persuade administrators to implement ideas directed toward improved services for clients and citizens.[2]

Although little attention has focused on the involvement of low-level personnel in change, we see them as a valuable source of innovative ideas which may contribute to the improved effectiveness of criminal justice agencies. As operational personnel, they are in a strategic position to diagnose and develop viable solutions which can be incorporated into the general organizational plan. Moreover, many of these personnel are participating or have participated in higher education programs; hence they are aware of new methods and techniques for solving criminal justice problems.[3]

Unfortunately, exposure to new ideas is a necessary but not a sufficient ingredient for initiating change, especially when personnel are trying to initiate changes while working in grassroots positions, i.e., positions with no or limited authority to affect policy. Problems arise when grassroots personnel who are interested in initiating change are confronted with administrative obstacles. Failure can often force them out of the organization. In some instances, a few low-level employees may decide to remain and challenge personnel in higher positions of authority; this can benefit both the organization and the individual. However, the lack of knowledge and skills in a conflict strategy often results in excessive energy being channeled into unconstructive activities. **We contend that the university should, but does not, prepare students to deal with these and other problems associated with initiating changes from below.**

While educators tend to agree that they enjoy seeing their graduates become involved in changing inadequacies in the criminal justice system, most would also agree that such opportunities usually occur later in the student's career. This association of change with positions of authority is reflected in the programming of criminal justice education. Tenney (1971) and Johnson (1975) found in an analysis of such programming that three approaches are emphasized: training for normal job requirements of entry-level positions, i.e., a training perspective; preparation for positions of authority which usually occur later in the career, i.e., a professional perspective; and, studying and analyzing issues pertaining to criminal justice from a conceptual point of view, i.e., a social science perspective. What happens to college graduates who are motivated to attempt changes in the period between the early entry-level positions and the later positions with more authority seems to have been overlooked.[4]

The important role of educators in dealing with this question cannot be overemphasized since graduates, especially those with B.A. and M.A. degrees, usually remain in lower level line or staff positions for substantial portions of their professional careers. Higher education's lack of response to the problem area is the critical issue addressed in our university-based change agent training experiment. Of special concern is whether an educational model can be designed which deals directly with these problems.

Breadth Of The Training Objectives

The ultimate objective of the change agent training program is to affect graduates' abilities to successfully initiate improvements which benefit coworkers, clients, or citizens. Before this can be accomplished, we believe there are a number of

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intermediate and immediate objectives which have to be achieved. On the intermediate level, the training should prepare low-level personnel to overcome three sets of organizational barriers found through our study and experience to be inherent in organizations. These are (1) a hierarchical structure which creates red tape and autocratic supervision, (2) an inadequate reward system, and (3) a scarcity of resources. Immediate training objectives relate to preparing grassroots personnel to deal with individual inadequacies associated with change agentry. These include errors in developing change products, misconceptions about power and its use, and lack of individual commitment toward changing while working from below.

In developing the experiment, it became readily apparent that we had no control over the organizational work situation in which students would be placed after graduation. Therefore we assumed that if a university-based change agent training program could have a positive effect on the individual inadequacies of grassroots personnel, then graduates would have the ability to overcome barriers imposed by structural aspects of the work situation and, subsequently, would be able to initiate change in the organization much earlier in their careers than could normally be anticipated.

Conceptually, there are three levels of training objectives. However, the scope of the evaluation allowed for an assessment of program impact on only the immediate ends, i.e., affecting students' ability to overcome individual inadequacies associated with change agentry. Consequently these ends defined the breadth of the training objectives. It is important that the structural problem of the work situation be discussed, even though an assessment of the intermediate and ultimate level objectives is beyond the scope of the experiment.

I. STRUCTURAL PROBLEMS TO BE OVERCOME IN THE WORK SITUATION

Havelock (1973a) reports a number of studies which identify hierarchy as one of the most important organizational factors influencing knowledge transmission, one requisite of planned change activity. In criminal justice agencies, the kinds of hierarchical relationships vary from a formal chain of command and military rank structure found in police departments, to organizations which have only two or three levels of hierarchy, such as group homes for delinquents. Though these two examples differ in the number of authority levels, the importance of authority is still a common element. Increased decision-making responsibility is seen as being directly related to levels of authority; therefore individuals assuming higher level positions usually approve decisions made by individuals below them in the structure. This close association of authority and decision-making responsibility creates two obstacles to change: organizational "red tape" and autocratic styles of supervision.

Large organizations are especially known for their red tape. Administrators can avoid changes by simply using bureaucratic procedures to prolong the acceptance of new ideas. The change agent is confronted with such obstacles as extensive paperwork, committee review, and rigid procedures in getting action on a plan. Often this delay frustrates the initiator, causing him to abandon his idea. In particular, high-ranking officials can use red tape as a management ploy. However, there are times when change is delayed or prevented unintentionally. Large police departments and state correctional agencies frequently use both intentional and unintentional delay tactics. Delay, however, in smaller organizations such as community treatment agencies, becomes a problem only when approval has to be obtained from outside officials such as the mayor or a board of directors.

Whereas red tape is more of a barrier to change in large organizations than in small units, the reverse is true for autocratic styles of supervision. Study and experience in change agentry have shown that a change agent's opportunity to locate advocates who facilitate administrative commitments increases in multilevel organizations. Moreover, the nature of the change, such as conducting a pilot program in one's own area of responsibility, may not require administrative approval; rather, to implement a change, the initiator has only to neutralize a lower level supervisor. In small agencies, however, the personalities of the few individuals in authority positions become critical in obtaining administrative commitments. This places more importance on the skills of the innovator in obtaining approval from only one or two individuals who are in positions of authority.

The second major organizational barrier to change is the organizational reward system. Havelock (1973a:6-25) states "the pattern of compensation and rewards is a key determinant of the member's level of innovativeness." Traditionally in criminal justice agencies, personnel are provided with material and personal rewards for functioning in a reliable and desirable way. Doing what is expected by the organization and doing it well yields extrinsic rewards, such as salary increases or promotions, and intrinsic ones, such as words of praise. The problem is that change, whether planned or spontaneous, is not usually viewed as a normal job requirement; hence, members are seldom rewarded for such activities. Occasionally, a large organization will institute a "suggestion box" or other methods to facilitate obtaining new ideas from low-level personnel; however, those who make plausible suggestions may not receive ample credit. On rare occasions agencies will build in reward systems for change, such as salary bonuses for each change which improves the effectiveness of the agency. Unfortunately, this type of reward system is the exception rather than the rule.

A final organizational barrier which can limit change is scarcity of financial and manpower resources (Kaufman, 1971). It has long been recog-

nized that public agencies seldom have enough money or personnel to provide the kind of services needed for their clients. However, within any operational budget priorities are established; therefore, the problem is not scarcity of money or personnel, but rather, allocation of these resources. These decisions are primarily made by top management. The problem change agents must overcome is reallocation of these scarce resources.

In criminal justice there exists an added dimension which enhances opportunities to overcome the problem of scarce resources. In recent years national concern for the crime problem has made available some federal and private grant money through funding agencies such as the Law Enforcement Assistance Administration and the Police Foundation. In addition, many criminal justice agencies have developed volunteer programs which involve community citizens and university students on a nonpaid basis. These resources can also be used by change agents in low-level organizational positions. Again, the problem is redirecting such resources.

II. INDIVIDUAL INADEQUACIES WHICH AFFECT CHANGE FROM BELOW

Quite often organizational barriers are compounded by inabilities of change agents themselves, i.e., errors in designing ideas of change, misconceptions about power and its use, and the lack of individual commitment toward change while working from below. Correcting these individual inadequacies is the focus of the change agent training program under study.

Individual Inadequacies in Designing Ideas of Change

Initiating organizational change is a serious endeavor. Establishing confidence that the proposed changes will benefit co-workers and/or clients requires careful planning and testing before full-scale implementation takes place. When change is attempted by personnel in low-level positions, two critical errors are commonly made in designing the change product. First, these change agents usually do not adhere to a rational planning process. That is, little thought is given to "realistic diagnosis of needs adequate to resource retrieval, collaborative planning, solution building, and systematic design in evaluation of alternative solutions" (Havelock and Havelock, 1973:2). It often happens that proposed changes are seen by management as self-serving, with no consideration for organizational goals evident in the change product.

Second, the energy of low-level change agents is usually directed toward changing policy or a structural aspect of the organization rather than focusing on making changes within their immediate work setting. Granted, the former change target is important; it is, however, extremely difficult for low-

level personnel to obtain administrative commitments for such change or to maintain control over the development and testing of change in the event approval is obtained. It is desirable to limit the scope of the change to the immediate work setting, for there are endless opportunities to experiment with new ideas which do not require top echelon approval. If the change is found to be beneficial in the immediate work setting, the change agent may attempt to establish it as an organizational practice.

In light of these deficiencies of skill in designing change products, we established the first training objective as follows: **to increase students' knowledge of and propensity to use a research and development change approach.** This rational approach to the evaluation and application of new ideas includes research development, packaging, and testing before adoption takes place. It focuses on planning and generating empirical evidence to document the worth of new ideas and the possible impact of such ideas upon the agency and the lives of the people involved.

Misconceptions of Power and Its Use

In addition to the problems associated with the development of change products, many grassroots personnel have misconceptions about power and its use. According to Mechanic (1962), power is, "any force that results in behavior that would not have occurred if the force had not been present." The most frequent misconception about such a view of power is that authority is the primary force available to promote change. Consequently, if persons occupy positions of little or no authority, they view themselves as powerless.

The first undesirable consequence of this misconception is the failure to recognize and develop sources of power other than authority; for example, power in the form of expertise, influential contacts, credibility, information and equipment control, etc. (Johnson and Johnson, 1975; Peabody and Dietterich, 1973). A second undesirable consequence occurs when relatively powerless low-level personnel attempt to promote change through the inappropriate use of change tactics. Deutsch (1969) has noted that a variety of strategies are available to low-power people for influencing those in positions of authority. However, all too often these personnel almost immediately use conflict tactics, such as confrontation, without any base of power. They consider the acquisition of knowledge concerning the use of collaboration, negotiation, or confrontation as a waste of time. Such behavior often produces disenchanted personnel who feel unable to influence decision making within their organization and as a result, they leave.

The importance of power led us to design a second training objective: **deemphasize the perception of authority as the principal source of power and increase knowledge and skills for developing appropriate change strategies.** Since people in posi-

tions of authority tend to resist change from below, strategies of collaboration, negotiation, and conflict need to be carefully plotted for desired results. It is imperative for a change agent to learn the fundamentals of assessing a power base, acquiring more power, and applying change strategies and tactics which are consistent with the amount and nature of this power.

Commitment to Change Agentry

Another factor that has been identified as being critical to change agentry from below is individual commitment to improving the effectiveness of criminal justice organizations. An indicator of such commitment is the extent of enjoyment an individual receives from the process of trying to change inadequacies rather than concentrating solely on specific results. Gardner (1964) contends that the self-renewing individual makes commitments to something larger than his own ego. He further states that this type of individual associates happiness with "striving toward meaningful goals," not necessarily with attaining those goals.

Other indicators of individual commitment are an eagerness to continue to learn more about the processes and skills of change, and being engaged in teaching others. The problem to overcome is failing to continuously renew one's commitment to change agentry by reading and talking to other change agents. Failing to involve others in change agentry prevents the development of a support system which provides continuous reinforcement. Those who feel that they know it all, and those who prefer to work alone risk burning themselves out and typically will move out of the organization rather than allow themselves to feel helpless. Since unsuccessful attempts at change are much more frequent than successful ones, we need to develop grassroots change agents who do not grow discouraged and give up.

Notably, the third training objective of the change agent program is: **to increase personal commitment to grassroots change agentry which is characterized by assertiveness, self-confidence, and enjoyment in being involved in the process of change. Moreover, we want students to be eager to continue to learn about change agentry and to teach others how to become involved in effecting change.**

Scope And Design Of The Experiment

In recent years, some changes have taken place in criminal justice higher education, though not necessarily under the guise of new direction.[5] First, emerging two-year programs have tended to shift from a total concentration on training-type courses to the incorporation of both professional and social science perspectives. Second, four-year programs are shifting more to course content which integrates professional and social science perspectives. Further, the number of internships and practicums are increasing nationwide, in both undergraduate and graduate programs. Some graduate level and B.A. degree programs in large universities are also beginning to focus more attention on planning and research application, and interpersonal skill development, and several programs emphasize planned change in criminal justice.

This evidence suggests that criminal justice education is being infused with programs offering a variety of courses, some of which are simply replicas of other programs, while others reflect new directions. General knowledge resulting from conversations with colleagues in other universities reveals a major shortcoming which seems to overshadow the scattered new directions found in these programs today; that is, initiatives do not follow basic principles of program or curriculum development. Attention is not given to such developmental tasks as setting specific objectives that stem from a conceptual framework. It is also difficult to see how various educational experiences and course offerings are linked together to achieve specific objectives. Most importantly, it is rare to find new initatives which have been tested under control conditions. In essence, the new direction in criminal justice education seems to be characterized by spontanious, action-oriented, personal-experience change.

In an attempt to avoid such program development errors, our training model is designed to accomplish the training objectives discussed earlier. As presented, these training objectives stem from a set of assumptions regarding requisites for college graduates to affect change in various grassroots change agent roles. Moreover, each educational experience of the training model, which will be described later, has been carefully selected to affect one or more of the training objectives. Importantly, a rigorous evaluation of these program effects was employed. The remaining portion of Part I discusses the change agent roles for which students are being prepared; an overview of the training design; and, the evaluation strategy being used to determine the impact of the training.

I.   ROLE   DEFINITION   OF   THE   GRASSROOTS CHANGE AGENT

Following the Havelock and Havelock (1973) guide for developing change agent training programs, the first task was to define the change agent role which we intend college graduates to assume. Study and experience led us to believe that graduates with B.A. and M.A. degrees move into entry-level staff or line positions with defined job functions, but not without latitude in methods of task completion.[6] Although much discretion is usually given to entry-level personnel, we further assumed that change agent activities are not part of "business as usual"; thus, often these activities have to be added to the normal job activities.

The specific change agent functions that students would be trained to add to normal job requirements stem from the previously discussed training objectives. That is, change activities would entail the development of new ideas using research and devel-

opment principles, the development and use of power to convince decision makers to try new ideas, and the increase of individual commitment to change while working from below.

Change agent activities can be made operational in a variety of ways, depending on the type of work situation in which the agents operate. Table 1.1 presents a change agent work situation typology based on two criteria — reference of the change agent to the target organization (inside or outside of the target organization) and formal or legal authority assigned to the change agent's work role (no authority or limited authority).

Each of the four types of change agent work situations included is followed by examples of roles in which change agent activities can take place. Further, the scope of change activity and the time frame for initiating change within each type of work situation are presented.

Typically, employment opportunities for college graduates with limited practical experience are restricted to positions, either inside or outside the target organization, that have no formal authority to affect organizational policy decisions. Such limitations in the criminal justice job market stem primarily from the reluctance of administrators to accept lateral entry as a way to update their organizations.

Because of these employment positions, many people in the field of criminal justice, both academics and practitioners, assume that change agents cannot induce change while occupying such roles. Study and experience have revealed that people tend to think that inherent status, norms, and power relationships stifle meaningful change agent activity from below.

Contrary to popular opinion, we assume that meaningful change agent activity can take place in positions of limited or no authority inside or outside the target organization. Take the case of college graduates who are interested in engaging in change agent activity from grassroots work situations inside the organization (Type I in Table 1.1). In their first

jobs, they normally assume positions at the bottom of the hierarchy, making it difficult to get to top-level decision makers to effect organizational policy changes. Limiting the scope of change agent activity to one's immediate work setting, however, increases opportunities to implement new ways of operating, for grassroots personnel have wide discretion in completing job requirements at this level of organization. Further, since proximity to decision makers is essential in using persuasion strategies, having only to deal with immediate supervisors increases application.

When determining the scope of a change agent's activity, his role is an important factor. A police patrol officer may, for example, initiate such activities as trying new ways of handling family disputes. To be assured that the new way of operating is more effective than the previous techniques, the officer could generate empirical data by using appropriate research methods to fit practical constraints, limited time, manpower, money, etc. If a pilot project suggests further investigation on a larger scale, faculty and/or students from a nearby university could be asked to help. Such initiatives on the part of a grassroots officer may not necessarily be appreciated by supervisors; therefore, he must develop strategies that insure cooperation or noninterference.

The foregoing examples illustrates a work situation where the change agent's objective is to improve an operation in the immediate setting, with organizational policy changes being secondary. There are, however, positions of no authority inside some criminal justice organizations where the immediate work setting and organization policy overlap, such as counselors in group homes, half-way houses, or residential group treatment facilities. In these positions, the nature of the change agent activities will be different from that of bureaucracies, for by being close to key decision makers, change agents can affect the immediate work setting and policy simultaneously.

Oftentimes low-level personnel have opportunities to function as change advocates from within the

Table 1.1	TYPES OF WORK SITUATIONS FOR CRIMINAL JUSTICE CHANGE AGENTS WORKING FROM BELOW		
Change Agent Work Situation	Type of role	Scope of Change Agent Activity	Time Frame in reference to Graduation
I. Inside target organization with no authority to formulate policy	Police patrolman Probation Officer Counselor	Immediate work setting	First years into career
II. Inside target organization with some authority to formulate policy	Planners Evaluators Administrative assistants Special assignments	(1) Immediate work setting (2) Limited organization policy	Several years into career
III. Outside target organization with no authority to formulate policy	Research assistant Program coordinator	(1) Immediate work setting inside parent organization (2) Organizational policy in target organization	First years into career
IV. Outside target organization with some authority to formulate policy	Criminal justice planners at county, state levels Consultant	(1) Immediate work setting inside parent organization (2) Organizational policy in target organization	Several years into career for BA graduates: First years into career for graduate trained personnel

organization. In cases where a group with some authority, such as the Fraternal Order of Police, engages a changing organizational policies, change agents could advocate the importance of including these policies in procedures to quantify changes resulting from the initiation of a new idea. Further, one could advocate detailed planning of strategies to sell new ideas to management, emphasizing a host of strategies discussed in the literature. Occasionally, inside change agents at the grassroots level of an organization may also have opportunities to act as advocates for the use of appropriate scientific methods in situations where top management initiates policy changes, especially if the change directly affects the role the person occupies. In smaller organizations such as those involved in community-based treatment, the agent who advocates planned change could easily be assigned the task of initiating the action being advocated, or finding expertise and federal funds to conduct such activities.

In addition to the scope of change agent activity discussed above, the time frame for change agents to engage in change agentry varies according to the type of work situation. Given the extensive documentation in the literature regarding the socialization process in organizations, a graduate who assumes an entry-level position in an organization should begin engaging in change agentry activities during the first years in the organization. Unless one gets involved when he enters the organization, he risks getting caught up in "business as usual." The longer one waits, the more difficult it may be to break from the established ways of operating. Further, reductions in skill proficiency tend to be directly related to the use of such skills. Therefore, it is important for agents of change to practice their skills.

Other work roles in which change can be initiated or advocated by low-level personnel inside the organization are found in work situations where they have some but limited authority to affect policy (Type II in Table 1.1). Change agents who work in these positions can also utilize research and development principles and various change strategies available to agents working in other types of situations. There is, however, more opportunity to expand the the scope of the change to include organizational policy for in this work situation the distance to top management is reduced. Also, college graduates have an opportunity to move into this work situation after several years in their careers.

The final two types of change agent work situations presented in Table 1.1 (Types III and IV) focus on roles outside of some target organization. The major difference between outside and inside change agents is the scope of the change activity. First, the proximity of outside change agents to key decision makers in target organizations will enable them to affect organizational policy. However, the effects these change agents have on organizations are still limited to changes related to the immediate work setting. Second, whereas inside change agents may have to modify their use of applied research tech-

niques in developing new ideas, graduates who occupy outside positions have opportunities to use these skills. Conversely, activities pertaining to the development of strategies for persuading decision makers in target organizations to develop, test, or adopt innovations will be more difficult for those outside. This is because outside change agents have to overcome obstacles which are not as problematic to those inside the organization, such as limited information about the network of power centers.

There is little difference in the time frame in which inside and outside change agents should begin initiating change. In the case of outside change agents without authority to formulate policy, initiation of action should begin during the first years of one's career, a function of having to enter organizations at the grassroots level. After several years of experience or advanced graduate training, individuals may have opportunities to assume positions with some authority and thus become more involved in making policy changes, both in target organizations and the parent organization.

The four types of work situations discussed above define the various roles for which college graduates can be prepared by participating in the change agent training program under study. The design of this innovative program is presented below.

II. TRAINING DESIGN

Our definition of the change agent role which we intended to prepare college students dictates the use of a functional-set-skill training approach (Havelock and Havelock, 1973:37-43).[7] This approach treats change agentry as a set of skills that go together to make up distinct functions of a work situation. Advocates of this training perspective believe that lessons about change agentry can be guided and are not necessarily learned by individuals' inquiry and discovery. Further, these advocates contend that change agent functions are not part of the normal role; therefore they have to be added.

The training design consists of four related prescriptive variables. These are: academic preparation, teaching modalities, experimental learning components, and reinforcement. Table 1.2 demonstrates how these variables have been used to form components of the training model. Later, in Part 2, detailed descriptions of these training components are discussed.

Students who are interested in the CAT program are initially contacted and advised about prerequisites one to two semesters prior to entering the program. An introductory level statistics and methods course is required so that all participants enter the program with similar research backgrounds. In addition, students are encouraged to take other research, organizational, and field training courses to better prepare them for the varying research and development experiences provided in the CAT program.

Table 1.2 CHANGE AGENT TRAINING DESIGN FOR COLLEGE STUDENTS PURSUING CAREERS IN THE FIELD OF CRIMINAL JUSTICE

Prior to Entry into the CAT Program	CAT Program	After Completion of CAT Program
Preparatory academic work completed Three research courses One organizational course	**First Semester** Innovation and evaluative research (3 credits)	Maintenance of university-CAT participant supportive relationship
Preparatory field experience Volunteer work, or an internship in a criminal justice agency	**Second Semester** Dynamics of Planned Change in Criminal Justice (3 credits)	
	Both Semesters Field Research or thesis credit (6 credits)	

During the fall semester of the CAT program, students take the first of two courses, entitled, "Innovation and Evaluative Research in Criminal Justice." This course is designed to affect cognitive, affective, and behavioral learning associated with developing change products by using a research and development approach to planned change. Students are exposed to model building, evaluative research methodology, and grantmanship.

In the spring, CAT participants take the second course, which emphasizes knowledge, attitude, and skills necessary to persuade persons in positions of authority to accept new ideas. The students are exposed to readings, communication skill workshops, and professional change agents who work in the field of criminal justice. Also, class members initiate a planned change action that centers around getting decision makers to implement some idea which alters the usual routine of an organization. Whereas the fall semester course concentrates more on cognitive skill development, the spring course focuses on interpersonal skill development associated with change agentry working from below.

To optimize achievement of our training objectives, we also focus upon the classroom learning environment as another experimental variable. Teaching modalities used are intended to facilitate the recognition, acquisition, and the appropriate use of power — skills seen as essential in effecting changes at entry-level positions. These modalities include: collaborative decision making, unstructured classroom setting with a changing environment, active involvement of students in the learning process, deemphasis of hierarchial student-professor relationships, and mechanisms to manage frustration.

To provide opportunities to apply classroom knowledge dealing with our conception of change

agentry, each student is assigned to a decision maker in some criminal justice agency to do evaluative research developed around research questions which are of interest to decision makers. In this role, students further develop their skills regarding appropriate methods and are confronted with many of the problems which accompany developing and selling new ideas in criminal justice agencies.

The final dimension of our CAT training program concerns maintenance of supportive relationships with former participants for several years after graduation. This postgraduation contact is intended to reinforce university-based training. It is assumed that assisting graduates in developing change strategies, providing psychological support for planned change, and involving graduates in training other CAT participants will optimize transfer of knowledge, attitudes, and skills to the world of practice.

Evaluation Strategy

In developing the evaluation strategy, we intended it to reflect a concerted effort to adhere to the basic tenets of applied research where the experimental model was carefully designed simultaneously with the research component of the experiment. During the experiment, there were slight shifts in the conceptualization of the CAT program which created some measurement problems; however, for the most part the original evaluation plan was successfully implemented. First, the overall effects of three dimensions of the CAT program were determined. These dimensions included formal course work, classroom environment, and parttime research exposure. Second, we examined the effects of these experimental elements individually. This latter evaluation phase is useful in determining why specific program components did or did not contribute to goal achievement.

I. RESEARCH DESIGN, SAMPLING, AND DATA COLLECTION

To examine the effect of the CAT program, a post-test matched control group design was used. This quasi-experimental design consisted of one group of 26 advanced undergraduates and graduate students who participated in the CAT program during the 1974-75 and 1975-76 academic years of operation. For the first year of the experiment, 9 of the 13 students completely finished all aspects of the program, while one completed three-fourths of the work required and three completed half of the program. For the second year, 14 students completed the entire two-semester program. These two combined classes formed the experimental group under study.

Two additional groups of students participated in the study as members of control groups. Selection of these group members was based on surveys completed by approximately 70 percent of the under-

graduate law enforcement and criminology juniors and 80 percent of the graduate students during late fall of 1974 and early spring of 1975. The questionnaire used in the survey included questions pertaining to three sets of matching criteria which were found to equate two groups of students in an earlier study of the 1973-74 pilot year of the CAT program. Specific criteria used to select 58 students for inclusion in two control groups were four background characteristics (academic status, fulltime field experience, career plans, and sex), four cognitive abilities indicators (grade point average, GRE/SAT verbal and math scores, and rank of the high school graduating class), and two change agent characteristics (propensity to enact change during the first two or three years into one's career and propensity to enact change during later years of one's career). After stratifying the sample of 58 students according to academic status (undergraduate or graduate status), they were randomly assigned to one of two control groups. Table 1.3 displays the similarity of these two control groups and the experimental group according to the above criteria.

Students' academic status, fulltime criminal justice field experience, and career aspiration are similar across the three groups while there are approximately 25% more females than males in control group two. Also the cognitive ability of the three groups as measured by grade point average[8] and GRE/SAT score are similar; however, dissimilarity exists between the control and CAT groups regarding high school rank — more of the s t u d e n t s in the control groups than in the CAT group graduated in the top 25% of their high school class. Finally, approximately 80% of the members of the three groups indicated they could enact change during the early and later years of their careers. The CAT group was, however, more definite about their change agent propensity than members of the two control groups. Spuriousness which may result from change agent propensity prior to participating in the study was statistically controlled in subsequent analyses.

The undergraduate study participants, including CAT and their comparative groups, were part of the 305 law enforcement and criminology majors who graduate in May, August or December of 1975 and 1976. Table 1.4 presents a comparison of the group participating in the experiment with other graduates by final cumulative grade point average. These results reveal that 68% of the undergraduate study participants graduated with 3.0 to 4.0 grade

Table 1.3 BACKGROUND, COGNITIVE ABILITY, AND CHANGE AGENT CHARACTERISTICS OF CAT PARTICIPANTS COMPARED WITH MEMBER OF TWO CONTROL GROUPS

Characteristics	CAT No.	CAT Percent	Control 1 No.	Control 1 Percent	Control 2 No.	Control 2 Percent
Background						
Academic status						
Undergrad.	18	69 %	19	65 %	20	69 %
Grad.	8	31	10	35	9	31
	26	100	29	100	29	100
Sex						
Female	9	35	9	31	17	59
Male	17	65	20	69	12	41
	26	100	29	100	29	100
Fulltime C.J. Field experience						
None	14	54	18	64	17	60
1-18 months	9	35	3	11	8	29
18 months +	3	11	7	25	3	11
Missing	0		1		1	
	26	100	29	100	29	100
Career aspirations						
Professional	20	77	19	65	23	79
Academic	6	23	10	35	6	21
	26	100	29	100	29	100
Cognitive ability						
Grade point ave.						
2.00-2.49	2	8	2	7	0	
2.50-2.99	4	16	8	29	12	43
3.00-3.49	18	72	14	50	10	36
3.50 +	1	4	4	14	6	21
Missing	1		1		1	
	26	100	29	100	29	100

Table 1.3 Continued

	CAT No.	CAT Percent	Control 1 No.	Control 1 Percent	Control 2 No.	Control 2 Percent
GRE/SAT Verbal						
Less than 400	3	16	5	31	2	9
400-500	6	31	6	38	5	23
501-600	0		7	37	8	36
601 +	3	16	5	31	7	32
Missing	7		13		7	
	26	100	29	100	29	100
GRE/SAT Math						
Less than 400	1	5	1	6	1	4
400-500	6	32	4	25	7	32
501-600	7	37	6	38	10	46
601 +	5	26	5	31	4	18
Missing	7		13		7	
	26	100	29	100	29	100
High school rank						
Top 10%	3	17	3	14	8	32
10-25%	6	33	11	52	10	40
25-50%	8	44	6	29	6	24
Less than 50%	1	6	1	5	1	4
Missing	8		8			
	26	100	29	100	29	100
Change agent indicators						
Propensity to change during first 2-3 yrs.						
Definitely no	0		0		1	03
Probably no	5	19	7	24	5	17
Probably yes	5	19	17	59	13	45
Definitely yes	16	62	5	17	10	35
	26	100	29	100	29	100
Propensity to change during later years of career						
Definitely no	0		0		0	
Probably no	5	19	5	19	5	17
Probably yes	7	27	13	48	12	41
Definitely yes	14	54	9	33	12	42
Missing	0		2		0	
	26	100	29	100	29	100

Table 1.4 NUMBER AND PERCENT OF GRADUATING SENIORS WHO PARTICIPATED IN THE STUDY COMPARED WITH OTHER GRADUATES BY GRADE POINT AVERAGE

GPA	Study Participants No.	Study Participants Percent	Other Graduates No.	Other Graduates Percent	Total No.	Total Percent
Greater than 3.5	7	14 %	17	7 %	24	8 %
3.0	28	54	47	19	75	25
2.6	16	30	73	30	89	31
Less than 2.6	1	2	103	44	104	36
Missing	4		9		13	
Total	51	100	249	100	305	100

point averages compared with only 26% of the other graduates. With one exception, all of the study participants completed their undergraduate programs with better than a 2.6 GPA, whereas 44% of the other students graduated with less than a 2.6 GPA.

The 28 graduate students who participated in the study are a sample of the 74 students who enrolled in the Institute's graduate program in the fall semesters of 1975 and 1976 and in the spring semester of 1976. Approximately 30% of all Ph.D. and M.A. candidates during these time periods were involved in the study.

Data were collected from the study participants by questionnaire and personal interview. Students were given the questionnaire immediately following the close of the 1975 and 1976 spring semesters and were interviewed one to three months later.

Data collection procedures related to these activities are as follows. First, students who were selected for the study were notified by letter, telephone, or personal contact. It was explained that the study was designed to obtain opinions and experiences of students regarding three areas of academic study: research, program development, and planned change. Follow-up telephone communication established mutually convenient times to complete the questionnaire at designated testing rooms at the University of Maryland. With the exception of one CAT graduate and two students selected for a control group, students contacted completed the questtionnaire phase of the study. Personal interview data were collected about students' academic and field experience in research, program development, and planned change. One trained graduate student interviewed 41 study participants in the summer of 1975 and 37 participants in the summer of 1976. Each interview took from 30 minutes to 1 hour and was conducted either at the University of Maryland or at the respondent's home.[9]

II. RESEARCH MEASURES

Four classes of variables were included in the evaluation; variables which measured outcomes, program processes, testing situation, and participants' background characteristics. Outcome measures to assess the effects of the CAT program were part of the questionnaire completed by 83 study participants. Two of these measures pertained to preparing students to use a research and development approach to change products. One of these, a cognitive index, was constructed to measure students' understanding of basic research concepts in the areas of statistics, research methods, and evaluation research. In addition, an affective index was developed to measure propensity to use theory, research methods, and evaluation procedures in the world of practice. To assess the extent to which training objectives pertaining to selling ideas of change were accomplished, one indicator of students' misconceptions of the association between authority and changing, and two measures of students' commitment to change agentry were constructed. The former outcome variable was students' general perception about the need for authority when initiating change. The latter outcome indicators measured students' personal commitment to change while working from below and learning or teaching others about change agentry.

We were unsuccessful in generating reliable and valid measures of students' knowledge about program development or strategies and tactics used in changing from below. However, descriptive data pertaining to differences in students' educational exposure to these areas of knowledge are presented as indicators of the effects of the CAT program. Also, descriptive data are used to demonstrate the extent to which CAT participants were exposed to application of the areas of knowledge under study.

Multiple indicators were used to determine the extent and nature of students' exposure to three sets of educational processes which were being experimentally manipulated in the CAT program. In the interview, students were asked to name courses and professors who had dealt with various facets of research, program development, or planned change material. Questions were then asked about the nature of this exposure and about the five teaching modalities which were also being used as experimental variables in the change agent project. Two types of questions were asked about the teaching methods; students' total exposure to the specified teaching method, and the intensity of their exposure to a professor or course most remembered for a given modality. The third set of experimental processes, field application of the three subject areas under study, was measured by a series of interviews questions pertaining to direct and indirect parttime field exposure to research, developing new ideas, and implementing change strategies.

The third class of variables pertained to individual background characteristics and career plans, and, the fourth class consisted of test situational variables, e.g., time of day student was interviewed. These data were collected either by the initial survey

used for selecting study participants or by the interview conducted in the summer following the programs. These classes of variables were examined for possible spurious effects, and, if found to exist, they were controlled for in subsequent analyses.

III. DATA ANALYSIS

Program Description

An important aspect of our analysis entailed describing the internal dynamics of the change agent program which is presented in Part 2. Data sources for this analysis included compilations of course materials and student projects, student interviews, and interviews of criminal justice decision makers with whom CAT students had worked during the research internship phase of the program. First, course material and student projects were synthesized to illustrate the structure and content of the formal course work. CAT students' exposure to such course content was also compared to similar course exposure of other students participating in the study.

A description of student exposure and response to varying teaching methods in the study was generated by interview. Our initial concern was to determine whether CAT students remembered more emphasis being placed on each of the experimental teaching methods in the CAT program than in other courses. In addition, we compared CAT participants' reports with other study participants as to the amount of emphasis placed on these modalities in all research, program development, and planned change courses taken during their educational careers.

A comparative analysis was also conducted to determine group differences in field application of research and planned change knowledge. In addition, data were collected from 46 decision makers who had been exposed to CAT students through the students tenure as research interns.[10] This information consisted of reports from personnel in middle management and administrative positions on their receptivity to research interns, student behavior, and decision makers' use of the interns' final research products.

Finally, a description of the dynamics of maintaining relationships with CAT graduates is presented in part IV to illustrate the reinforcement techniques used. An anlysis of their response to these university efforts provided further data on the continued relationships.

Program Impact

Outcome measures for this study were constructed using item analysis and factor analysis procedures (Williams, 1968 and Kim and Kohout, 1975, respectively.) Item analysis yielded levels of difficulty and discrimination of items and reliability estimates which were used to develop the knowledge index.

Factor analysis using the principal factor and varimax rotation solution routines, helped determine the most valid combination of items which measured students' propensity to use research and development principles and students' misconceptions of power and commitment to change agentry. Kuder-Richardson and Crombach alpha coefficients were used to determine the reliabilities of the cognitive measure and four affective measures respectively. In addition, Guttman scaleogram analysis aided in combining variables which measured students' exposure to the experimental teaching methods and field exposures.

The test of the overall component effects of the CAT program was conducted first using an analysis of variance and covariance procedure with a factorial design. The classical experimental approach of analyzing variance and covariance adjusts, in sequence, for the interrelatedness of the main effects or covariates, and the effects of statistical interaction between factors which are entered into the analysis.[11] If no significant interaction effects were found, the sum of squares of interaction was pooled into the error term's sum of squares, leaving the main effects for examination (Kim and Kohout, 1975: 405-409).

Second, the pattern and intensity of the relationships between the main effects and dependent variables were determined by a multiple classification analysis (Kim and Kohout, 1975: 416-417). This method displays the results of the analysis of variance or covariance when there are no significant interaction effects. Multiple classification analysis (MCA) is appropriate for assessing the strength of additive effects of a set of independent variables. It is equivalent to multiple regression using dummy variables and can be used with ordinal data without assuming linearity. MCA generates adjusted mean deviations from the grand mean (category effects) and beta coefficients(main effects).

A third dimension of the analysis strategy included an assessment of statistically significant interaction effects by using MCA and filtering one interactive variable on the other. This technique gives the category effects of a primary independent variable within subgroups of the second variable.

Fourth, a block clustering technique, developed by Hartigan (1972, 1975), was used to define "natural" groups of subjects by simultaneously assessing the similarity of student scores on two outcome measures.[12] For example, this procedure discovers students who score high on the knowledge test and also score high on a scale measuring propensity to use research and development principles. The number of CAT students falling into this group can then be compared with the number of other study participants in the group.

Special attention was given to problems of normality, linearity, homogeneity of variance, multicollinearity, and the ratio between the number of variables and sample size. Where distributions of the dependent variables were found to be skewed, ap-

propriate adjustments were made to determine the effects of such abnormalities, e.g., squaring the distribution. Tests of linearity and homogeneity of variance were conducted, and where problems of nonlinearity and unequal variance existed, deviant cases were removed to determine whether the original results were affected. In cases where the relationship between independent variables was found to affect relationships with the dependent variables (problem of multicollinearity), subsequent analyses were performed which separated the highly correlated independent variables. Finally, checks on the effects of the ratio between the sample size and the number of independent variables being analyzed simultaneously were made by varying the number of independent variables which were entered into the analysis. Results were reported only when they were found to be stable across analyses with different sets of variables, including both main effects and/or interaction terms.

PART II: DYNAMICS OF THE CHANGE AGENT TRAINING PROGRAM

The CAT program provides an opportunity for a small cadre of seniors and graduate students to spend one academic year studying and applying knowledge about planned change. The training design discussed in Part 1 is intended to offer CAT participants a combination of courses, teaching modalities, and field experiences which are not readily available at the University of Maryland. It was assumed that the intensity of these experiences should also be high in order to prepare students for the difficult role of changing while working from below.

Academic Preparation

In this section we will describe the three components of the CAT program to which students were exposed while enrolled in the law enforcement or criminology curricula at the University of Maryland. In addition, data collected from all study participants and agency decision makers with whom CAT students worked will assist in describing both the uniqueness and internal dynamics of the CAT program.

In designing the academic preparation component of the model which emphasizes a research and development change approach, we assumed that students should be introduced to the basic fundamentals of statistics, research methods, and organizational theory prior to entering the CAT program. These three subject areas were the foundation for the varying experiences offered in the CAT program. Undergraduates took introductory statistics, methods, and an organizational course during their junior year, and a psychological testing course in the fall semester of the senior year. Graduate students took a required methods or statistics course in lieu of the psychological testing course.

We further assumed that students who plan to enter the CAT program should be directly exposed to the dynamics of criminal justice agencies prior to entry. This experience facilitates the educational and experiential preparation of the model. During the spring or summer prior to entering the CAT program, students were placed in an operational agency of their choice. Efforts were made to place them in an agency for which they would later be managing an evaluation project. LEAA summer internship stipends were awarded to those students who worked during the summer. However, because of funding difficulties, this summer program has had to be discontinued.

To academically prepare students to be change agents, two formal courses were developed specifically for CAT participants. These courses were offered under an established tutorial course entitled "Selected Topics in Criminal Justice." Establishing

permanent courses was not necessary due to their experimental nature.

During the fall semester, students took a formal seminar entitled "Innovation and Evaluative Research in Criminal Justice." This course was designed to increase the students' skills in developing new ideas by using research and development principles.[1] Class members were required to develop a grant proposal which included a conceptual framework that stemmed from a criminal justice problem and related correlates found in the literature; a program with mutually exclusive components that could be tied back to the conceptual model; and a program evaluation framework which examined success or failure and the "why's and wherefore's" of the outcomes. To facilitate learning about acquisition of resources, students were introduced to the Law Enforcement Assistance Administration funding processes, first by guests who were involved in grant review and then by a grant preparation assignment. This course was demanding, both in terms of time and mental energy for it required students to think rather than simply regurgitate information back on an exam. The most difficult dimension of this course was to apply theory learned in other courses by constructing a conceptual framework for a program. Students also found it difficult to design a program and an evaluative framework simultaneously, a development procedure which is not used in the world of practice. They were consistently confronted with differences which existed between program development procedures being used in the field and those procedures which were being taught in class.

A second course entitled "The Dynamics of Planned Change in Criminal Justice" was offered in the spring semester. This course emphasized knowledge, attitude, and skill development that deals with persuading persons in positions of authority to accept new ideas.[2] Students were exposed to literature dealing with key problems that have to be overcome by change agents who are working from below. Further, practitioners who have been or are presently active in change agent activities were brought in as special guests, thereby giving students an opportunity to analyze case studies of planned change in action. In addition, a day-long interpersonal skill workshop on power issues, and class periods used to practice communication skills added to the interpersonal skill component of the class. Finally, class members had an opportunity to apply knowledge from this course through a change project. This project enabled students to develop and initiate a planned change action that centered around getting decision makers to implement some idea that altered their usual routine. The emphasis was on developing skills which we assume to be important, rather than on successfully persuading decision makers to accept the student's idea. The acquisition and use of power while assuming a low-level position was central in this project. Change projects en-

tailed situations conducive for the change, develop-ing the change product, and appropriate tactics for selling the change to decision makers. Examples of student change projects were as follows:

1. Creation of a horse mounted police unit within the university police department
2. Role change for police student aids
3. Retention of a group home for delinquent girls
4. Utilization of evaluation findings by staff of various criminal justice agencies

Some students were successful in getting parts of their change projects implemented, others were not. The most important outcome was, however, that most of the students successfully experienced the process of change while assuming a low-level role, i.e., that of a university student.

This course differed from the fall course not only in content but also in the type of challenge it pre-sented to students; that is, it focused primarily on interpersonal development. Underlying the various exercises introduced was the idea of getting to know oneself, one's weaknesses and strengths. Also, emphasis was placed on relating to others. Students were consistently placed in situations in class and the field where they could learn more about themselves and how they related to others. Feedback was an important facet of these exper-iences.

The uniqueness of this academic preparation was established by a comparative analysis of interview data collected from 78 of the 84 students who participated in the study. Table 2.1 presents a com-parison of CAT students with other participants on academic preparation in five subject areas, research-related courses, evaluation research-related courses, program development, grant preparation, and plan-ned change classroom exposure.

These results clearly show that students who participated in the CAT program had substantially more course exposure to the subject areas under study. An inspection of academic preparation of students in the regular program reveals that a dis-proportionate number have not been exposed to program development, evaluative research, or exten-sive planned change class exposure. Yet, when asked a question in the interview about their interest in these subject areas, most indicated an interest. This suggests that the CAT program offered subject areas which are not readily available to law enforcement or criminology majors.

Course intensity and student satisfaction were also important aspects of the CAT program. Table 2.2 presents CAT students' responses to four course intensity indicators: the extent to which the courses under study were time consuming, difficult, frustrat-ing, and intellectually challenging. When comparing the course intensity of the three subject areas of the CAT program with general research courses, it is clear that students perceived the courses offered

Table 2.1 EXTENT OF STUDENTS' ACADEMIC PREPARATION BY TYPE OF PROGRAM

| Academic Preparation | Program | | | |
| | CAT | | Regular | |
	No.	Percent	No.	Percent
Number of research courses (Formal and independent study)				
1	0	0%	8	15%
2	0	0	19	36
3	0	0	12	23
4	1	4	4	8
5	3	12	4	8
6	16	61	2	4
7	4	15	1	2
8	2	8	2	4
	26	100	52	100
Number of courses related to evaluative research				
0	0	0	39	75
1	12	46	10	19
2	11	42	2	4
3	3	12	1	2
	26	100	52	100
Number of courses related to program development				
0	0	0	26	50
1	12	46	17	33
2	12	46	5	9
3	2	8	4	8
	26	100	52	100
Number of courses covering grant preparation				
0	0	0	48	92
1	21	81	1	2
2	0	0	3	6
3	5	19	0	0
	26	100	52	100
Average planned change exposure*				
0	0	0	9	17
1	0	0	9	17
2	4	15	23	44
3	10	39	9	18
4	12	46	2	4
	26	100	52	100

* This measure consists of varying combinations of four types of exposure; exposure to classroom discussions, informal discussions with the professor out of class, reading assignments and a change project.

in the CAT program as more difficult, more time consuming, more frustrating, yet more intellectually challenging than their general research courses. This high intensity was seen as functional, especial-ly with most of the students reporting having been intellectually challenged.

Student levels of satisfaction with the courses concerning the subject areas under study are pre-sented in Table 2.3. An inspection of student ratings reveals that a majority of the CAT students rated their evaluative research, program development, and planned change courses as good to excellent. Several students, however, reported shaky experiences, as indicated in their rating of these subject areas. Two of these students, who said courses taken in these subject areas were shaky, discontinued the program

Table 2.2   COURSE INTENSITY BY SUBJECT AREAS

Subject Area	Difficult No.	Difficult Percent	Time Consuming No.	Time Consuming Percent	Frustrating No.	Frustrating Percent	Intellectually Challenging No.	Intellectually Challenging Percent
General Research								
Not at all	1	4%	0	0%	2	8%	2	8%
Occasionally yes	12	46	5	19	15	58	11	42
Usually yes	8	31	14	54	6	23	6	23
Definitely yes	5	19	7	27	3	12	7	27
	26	100	26	100	26	100	26	100
Evaluative Research (CAT)								
Not at all	1	4	0	0	1	4	0	0
Occasionally yes	11	42	3	12	8	31	4	16
Usually yes	5	19	6	23	6	23	11	42
Definitely yes	9	35	17	65	11	42	11	42
	26	100	26	100	26	100	26	100
Program Development (CAT)								
Not at all	2	8	0	0	3	12	1	4
Occasionally yes	6	23	4	15	8	31	2	8
Usually yes	7	27	8	31	5	19	8	31
Definitely yes	11	42	14	54	10	38	15	57
	26	100	26	100	26	100	26	100
Planned Change (CAT)								
Not at all	2	9	0	0	3	12	1	5
Occasionally yes	5	21	2	9	4	17	2	9
Usually yes	8	33	5	21	4	17	10	41
Definitely yes	9	37	17	70	13	54	11	45
Missing	2		2		2		2	
	26	100	26	100	26	100	26	100

after the first semester. One other student, who completed the program, was "turned off" by the entire CAT experience.

Table 2.3   COURSE EVALUATION OF CAT STUDENT BY SUBJECT AREA

Rating	General Research No.	General Research Percent	Evaluative Research No.	Evaluative Research Percent	Program Development No.	Program Development Percent	Planned Change No.	Planned Change Percent
Waste of time	0	0%	0	0%	1	4%	0	0%
Shaky/limited	3	12	3	12	1	4	3	12
Adequate	2	8	6	23	6	24	3	12
Good	12	46	6	23	9	34	8	32
Excellent	9	34	11	42	9	34	11	44
Missing	0		0		0		1	
	26	100	26	100	26	100	26	100

Classroom Environment

The general teaching approach used in the CAT program was an extension of the psychological contract method of teaching. In theory, this method allows students to build into a course features that address their needs as well as those of the professor. Through negotiation, the professor and students make decisions about course content and structure; and, subsequently develop a contract that is binding on all parties involved. Alterations that occur during the course require renegotiation and consensus by majority vote. Typically, the psychological contract developed by CAT students and their professor covered five areas: exams (number and type), field projects, rating system, course structure, and motivation mechanisms.

Within the general psychological framework, five teaching modalities were employed, each considered important in the creation of an environment conducive to learning about change. These modalities were:

Participation in the learning process

Student involvement in making decisions about courses

Deemphasis of an hierarchial student-professor relationship

Introduction of unexpected course changes

Management of frustration

Individually, these modalities are not new; but used in combination for the purpose of teaching students how to recognize, acquire, and appropriately use power, they create a radically different classroom environment.

Student Participation

The need for more student participation is an often verbalized complaint among college students of large universities. It is commonly found, how-

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ever, that even reduction in the class size stimulates only a few of the most articulate students to consistently participate. Moreover, students tend not to engage in out-of-class discussions about course material, nor do they offer or ask for assistance from other class members. We assumed that participation in and outside of class enhances the learning process; hence this modality centered around providing encouragement to facilitate participation in the learning process.

An inspection of Table 2.4 reveals that CAT and regular students reported approximately the same number of professors in the subject areas under study who had encouraged them to participate in the learning process. Similarly, most students in both groups indicated that they usually or frequently had received encouragement to participate in

class discussions. However, Table 2.4 shows that more CAT students than regular students stated they were usually or frequently encouraged to discuss course material with class members outside of class, and were encouraged to offer to or ask for assistance from other class members. Since 73% of the CAT group indicated that the CAT professor was most remembered for encouraging students to participate in the learning process, it is logical to assume that participation in the CAT program was responsible.

The most well-received structural dimensions of the CAT program, which were designed to enhance participation, were team teaching, with students assuming a professional role, and an oral defense of individual change projects, which was conducted much like "Meet the Press" of CBS-TV. The team teaching technique allowed students to be on center stage, with responsibility for introducing teaching techniques which would involve their peers in the learning process. In both years of the experiment students unveiled the sort of creativity which often goes undetected in the classroom. They used mechanisms such as crossword puzzles, role playing exercises, skits, questionnaires, and visual aids, all of which were constructed around specific reading assignments.

The oral defense of individual or group change projects highlighted the completion of the CAT program. Class members rotated among four roles, the presenter, the critic, the evaluator, and the observer. The moderator of this exercise was a current or former CAT student. This aspect of the course was conducted entirely by students and was announced as an event open to other students interested in participating in the CAT program the next year.

II. STUDENT DECISION MAKING AND STUDENT-TEACHER RELATIONSHIPS

There was a concerted effort to involve CAT students in making decisions which pertained to their experiences in the program. It was assumed that if students were to become effective agents of change, they should begin to gain experience by making decisions for themselves in areas that concern them. Furthermore, they must learn to identify their own needs and express them effectively. Also it was seen as important for individuals to be able to modify their own needs in accordance with needs of others. The development of the psychological contract itself is the best example of how this concept was made operational. Students were expected to assist in structuring the courses, incorporating their own needs as well as those of their professor.

Reducing the psychological distance between students and the professor facilitated students active involvement in decision making. To maximize interaction with the professor on a personal level, students were encouraged to develop a first-name

Table 2.4 STUDENT ENCOURAGEMENT TO PARTICIPATE IN THE LEARNING PROCESS

Extent of Encouragement	CAT Students No.	Percent	Regular Students No.	Percent
Number of professors who encourage participation				
No Profs.	0	0%	4	8%
One "	2	8	10	19
Two "	9	34	16	31
Three "	7	27	13	25
Four "	6	23	5	9
Five "	2	8	4	8
	26	100	52	100
Class discussion				
Never	0	0	8	15
Occasionally	4	15	3	6
Usually/frequently	22	85	41	79
	26	100	52	100
Outside discussion with class members				
Never	1	4	6	12
Occasionally	2	8	15	29
Usually/frequently	23	88	31	59
	26	100	52	100
Offered assistance to other class members				
Never	1	4	14	27
Occasionally	5	19	14	27
Usually/frequently	20	77	24	46
	26	100	52	100
Asked for assistance from other class members				
Never	0	0	21	40
Occasionally	10	39	18	35
Usually/frequently	16	61	13	25
	26	100	52	100
Professor most remembered for encouraging student participation				
CAT professor	19	73	11	21*
Other	7	27	42	79
	26	100	52	100

* These students had taken a course in the regular curriculum which was taught by the CAT professor.

relationship and to be active in expressing their needs in interacting with the professor. Students were also encouraged to express disagreement and, when doing so, to make suggestions as to how the courses could be altered to provide more fulfillment. When making as assessment of inadequacy, they were encouraged to take into consideration the needs of the professor and provide solutions which would be satisfying for all parties involved.

Table 2.5 reports student accounts of being involved in decision making and being encouraged to develop a personal relationship with professors

Table 2.5 STUDENT EXPOSURE TO DECISION MAKING AND DE-EMPHASIS OF HIERARCHIAL STUDENT - PROFESSOR RELATIONS

Teaching Modality	CAT Students No.	Percent	Regular Students No.	Percent
Student Decision Making Number of professors who involved students in decision making				
0	1	4%	8	15%
1	13	50	18	35
2	10	38	17	33
3 or more	2	8	9	17
	26	100	52	100
Professor most remembered for involving students in decision making				
CAT Professor	22	85	9	17*
Other Professors	4	15	43	83
	26	100	52	100
Extent of decision making by professor most remembered for this modality				
Never	0	0	7	13
Occasionally	0	0	20	39
Usually/frequently	26	100	25	48
	26	100	52	100
Student-Professor Relations Number of professors who de-emphasized hierarchial relationship				
0	0	0	6	11
1	9	35	14	27
2	10	38	18	35
3	3	12	10	19
4	4	15	4	8
	26	100	52	100
Professor most remembered for de-emphasizing hierarchial student-professor relations				
CAT Professor	21	81	12	23*
Other Professors	5	19	40	77
	26	100	52	100
Extent to which students were treated like colleagues by the professor most remembered for this modality				
Never	1	4	6	12
Occasionally	0	0	11	21
Usually/frequently	25	96	35	67
	26	100	52	100

* These students had taken a course in the regular curriculum which was taught by the CAT professor.

from whom they had taken courses in the three subject areas under study.

These results show that students who participated in the CAT and regular programs were similar in the number of professors remembered as using these teaching modalities. Most important, however, is that CAT students reported considerably more involvement in decision making and being treated like a colleague by the professor most remembered for these modalities than the other study participants. This result is significant in that 85% of the CAT students reported the CAT professor was most remembered for the former modality and 81% indicated he was remembered for the latter modality.

III. UNEXPECTED COURSE CHANGES

Change agents are continuously confronted with unanticipated events in the process of making change happen. Often decisions have to be made in a limited time period, which requires carefully developed strategies and the appropriate use of power. Introduction of unexpected changes in course requirements, due dates, and class structural dimensions were introduced to simulate this very real aspect of change agentry. In order for this modality to facilitate and not conflict with collaborative decision making and close student-professor relations, freedom to introduce unexpected changes was incorporated into the psychological contract. When such course changes occurred, students had to decide whether it was in their best interest to allow the change to occur.

Table 2.6 shows that CAT students reported more unexpected changes in the research, program development and planned change courses than

Table 2.6 STUDENT EXPOSURE TO UNEXPECTED COURSE CHANGES

Type of Unexpected changes	CAT Students No.	Percent	Regular Students No.	Percent
Professor most remembered for introducing unexpected course changes				
CAT Professor	16	62%	5	10%*
Other Professor	10	38	47	90
	26	100	52	100
Course requirements				
No	12	42	37	71
Yes	14	54	15	29
	26	100	52	100
Due dates				
No	16	61	37	71
Yes	10	39	15	29
	26	100	52	100
Unconventional teaching techniques				
No	16	61	48	92
Yes	10	39	4	8
	26	100	52	100

* These students had taken a course in the regular curriculum which was taught by the CAT professor.

other students who were involved in the study. Also, 62% of the CAT students indicated they remembered more unexpected changes introduced by the CAT professor than by other professors who taught courses in the subject areas under study.

IV. MANAGING FRUSTRATION

On the surface, the combined effects of the previously discussed teaching modalities appear to exemplify a consensus model, whereas the CAT program is actually very much conflict oriented, a model which is assumed to be functional and appropriate for change agent training. Structurally, participatory management principles which have been operationalized in the CAT program have been characterized as consensus type educational modalities. In reality, conflict is inevitable when employing this management style in an educational setting. Students are not accustomed to being involved; hence, when placed in a situation where they are structurally locked into participatory management, conflict emerges between an individual's need system and the need systems of others. Consequently, students experience frustration.

Such frustration was viewed as an important facet of change agent training, provided that mechanisms were present to teach students to manage it. It was assumed that change agents should respond to frustration by actively seeking resolutions which involve the person responsible for the frustration. Such resolutions may be in the form of verbalizing the frustration in hopes that the other person will be concerned, or offering suggestions or asking for assistance as to how the frustration can be reduced. Also, there should be little or no perceived risk for taking the initiative.

Two mechanisms were used to help students cope with frustration. First, it was assumed that professorial concern for frustration was necessary to prevent students from resolving the conflict in an undesirable way, e.g., dropping out of the program. Second, it was assumed that students often verbalize frustration without having thought about resolution, or resolve conflict without taking into consideration the needs of others. Hence, the professor assumed responsibility for offering alternatives for alleviating the frustration. The extent to which an intrinsic and extrinsic response was given to students was assumed to be directly associated with students' motivation to learn.

Table 2.7 presents CAT students' level of frustration, their response to frustration, and their perception of professional response to this frustration in the CAT program as compared to research, program development and planned change courses taken in the regular program.[3]

Interestingly, most CAT students indicated that they had been frustrated by the CAT professor as well as other professors who taught courses in the subject areas under study. As to student response to this frustration, 20 reported desirable responses to frustration created by the CAT professor (combina-

tions of verbalization, offering suggestions and working hard to meet the professor's expectations), while only 7 indicated handling frustration created by other professors in this manner. Student response to frustration which was viewed as questionable consisted of situations where they did not take enough action (i.e., only verbalizing frustration), or where they simply accepted the frustration and worked hard to meet the professor's expectation (i.e., conformity). A "questionable" response to frustration was reported by 9 students who had been frustrated by professors in their regular program. An undesirable response to frustration (i.e., only doing enough work for a passing grade or dropping the course) which was created by the CAT professor was indicated by 3 students, and 6 students stated that they had responded in this manner to frustration which had been created by other professors.

Further inspection of Table 2.7 reveals that the CAT professor showed more concern for students' frustration and offered more alternatives than other professors who had frustrated them. For most of the students, it is apparent that the two mechanisms of helping students cope with their frustration were operative.

Table 2.7 CAT STUDENTS' LEVEL OF FRUSTRATION, THEIR RESPONSE TO FRUSTRATION, AND THEIR PERCEPTION OF PROFESSIONAL RESPONSE TO FRUSTRATION

Teacher's Modality	CAT Professor No.	Percent	Other Professors No.	Percent
Amount of frustration				
None	3	12%	4	16%
Once/twice	2	8	2	8
Several times	8	31	10	38
Many times	13	49	10	38
	26	100	26	100
Student response to frustration				
Desirable response	20	86	7	32
Questionable response	0	0	9	41
Undesirable response	3	14	6	27
No frustration	3		4	
	26	100	26	100
Professor's concern about frustration				
None	1	4	10	46
Hardly ever	2	9	8	36
Usually yes	8	35	4	18
Definitely yes	12	52	0	0
No frustration	3		4	
	26	100	26	100
Professor offered alternatives				
No	2	9	11	50
Hardly ever	3	13	7	32
Usually yes	9	39	4	18
Definitely yes	9	39	0	0
No frustration	3		4	
	26	100	26	100

Experimental Training

The third component of the CAT program entailed direct application of research and planned change

knowledge. Students were placed in research intern positions where they were responsible for evaluating a criminal justice program or agency policy. Creating such opportunities for students to be exposed to the dynamics of the change process from a research and development perspective was seen as complementing the two formal courses previously discussed. As research interns, students were continuously confronted with decision making situations involving obstacles to conducting policy research as well as to organizational change.

CAT participants had two semesters to complete their projects. During the first semester, student researchers involved decision makers in identifying important research questions to be addressed in the evaluation. All projects used the same evaluation strategy to enable uniform post hoc evaluation.[4] In order to uncover other important questions, students first became familiar with the operation of their agency by observing or assisting the agency in some routine function, or conducting a descriptive research project of short duration. Second, measures for variables which make up the research questions were developed and approval of a rough draft of the data collection instrument and procedures was obtained from the chief agency administrator.

In the second semester, CAT participants were assigned, on a need basis, one to three undergraduate assistants who were enrolled in an independent research course. This additional personnel on each project gave the CAT participant management experience and also enabled the projects to include a larger sample, an essential element of the evaluation strategy being used. After data collection and computer analysis were completed, the student prepared an oral and written presentation for the agency decision makers that suggested ways in which results could be used. Through this experience, it was expected that students would be able to develop skills which facilitate achieving the stated training objectives.

During the two experimental years of the CAT program, 21 criminal justice agencies allowed evaluation research to be conducted by students. Eighteen evaluation projects were completed which involved the following programs or agency operations.

> A police special operation division unit
>
> Police ride-along program
>
> A consumer and commercial fraud unit
>
> A felony complaint screening unit
>
> Treatment of witnesses and county state's attorney's office
>
> Public defender's office operations
>
> Eight county homes for delinquent youth
>
> A youth service bureau
>
> A drug prevention program
>
> Shelter home for youthful offenders

> Juvenile court operations (evaluated both years)
>
> A therapeutic community for drug addicts
>
> A halfway house for adult offenders
>
> A prerelease center for adult offenders (evaluated both years)
>
> A volunteer program for juvenile services (evaluated both years)

In the pilot year of the program (the year prior to the two experimental years under study) we encountered difficulties in discovering meaningful projects for students to evaluate. During this first year it was noticed, however, that the lack of legitimacy of CAT roles may have been responsible for many of the problems. Hence, a second innovation model was implemented concurrently with the experimental years of the CAT program which structurally linked the university and a neighboring county government by establishing a university-based criminal justice evaluation unit.[5] This facilitated assignment of students to the previously mentioned evaluation projects.

In addition, we found in the pilot program year that projects which ran smoothly were those in which students had served in nonresearch intern roles prior to being given responsibility for conducting an evaluation project. These opportunities to become familiar with agency functions and personnel appeared to be important for students conducting policy research. Therefore, in subsequent years, students were exposed to agency operations prior to assuming a research intern role, or were assigned to a team project in which one or more of the team members had received such exposure.

Table 2.8 presents a comparison of CAT students with other study participants as to the amount and type of parttime field experience received as a student. These experiences were either fulfillment of requirements for individual study courses or were parttime jobs.

These data show that CAT students have had substantially more involvement in field research and planned change activities than their peers. It is clearly shown that the CAT program provides an additional experimential educational dimension to the regular criminal justice program at the University of Maryland. It creates opportunities for students to engage in policy research and to test their ideas about how to improve inadequacies in criminal justice.

Our experience with research interns has demonstrated that such roles can be established in varying types of criminal justice agencies. It is important, however, to also consider benefits or effects harmful to the criminal justice community. Tables 2.9 and 2.10 present data collected from 46 agency personnel who remember working with one or more of the CAT students. These data describe the personnel's receptivity to research interns, student behavior, and agency use of the final evaluation pro-

Table 2.8 STUDENTS' PARTTIME EXPOSURE TO FIELD RESEARCH AND PLANNED CHANGE EXPERIENCES

Extent of Exposure	CAT Students No.	Percent	Regular Students No.	Percent
Number of positions held				
0	2	8%*	22	42%
1	4	15	18	35
2	11	42	7	13
3	9	35	5	10
	26	100	52	100
Time spent in positions				
None	2	8	22	42
Less than 5 months	2	8	15	29
6 months to 1 year	8	31	7	14
More than 1 year	14	53	8	15
	26	100	52	100
Direct exposure to research**				
None	2	8	40	77
Less than 6 months	5	19	6	11
6 months to 1 year	14	54	4	8
More than 1 year	5	19	2	4
	26	100	52	100
Exposure to developing new ideas and/or implementing change**				
None	2	8	31	60
Developing new ideas or implementing change	1	4	7	13
Developing new ideas and implementing change	23	88	14	27
	26	100	52	100

* There were two Ph.D. students who did not enroll in the independent study courses.
** These experiences included both course-related and job-related experienses.

ducts. Personnel appraisals were based on varying degrees of contact with the interns, which included formal and informal meetings, visibility in their agency, and telephone conversations throughout the project year.

It is interesting to note in Table 2.9 that personnel questioned did not think of their agency as being receptive to research interns, whereas most indicated that they personally felt research interns could make a worthwhile contribution to their agency.

Table 2.9 DECISION MAKERS' RECEPTIVITY AND APPRAISAL OF STUDENT RESEARCH INTERNS

Variable	No.	Percent
Agency receptivity		
Not receptive	10	24%
Not really receptive	31	76
Somewhat receptive	0	0
Receptive	0	0
Missing	5	
	46	100

Table 2.9 Continued

Variable	No.	Percent
Personal receptivity		
Definitely no	0	0
Probably no	1	2
Probably yes	27	63
Definitely yes	15	35
Missing	3	
	46	100
Undesirable behavioral attributes		
Too critical		
Not at all	35	92
Somewhat	3	8
To a moderate extent	0	0
To a great extent	0	0
Missing	8	
	46	100
Inappropriate appearance		
Not at all	35	89
Somewhat	2	5
To a moderate extent	1	3
To a great extent	1	3
Missing	7	
	46	100
Late for appointments		
Not at all	33	85
Somewhat	2	5
To a moderate extent	2	5
To a great extent	2	5
Missing	7	
	46	100
Disturbed routine operation of agency		
Not at all	31	78
Somewhat	8	20
To a moderate extent	1	2
To a great extent	0	0
Missing	6	
	46	100
Took up too much of your time		
Not at all	25	64
Somewhat	11	28
To a moderate extent	3	8
To a great extent	0	0
Missing	7	
	46	100
Did not complete things he/she set out to do		
Not at all	25	64
Somewhat	9	23
To a moderate extent	2	5
To a great extent	3	8
Missing	7	
	46	100
Used too much research jargon		
Not at all	18	46
Somewhat	13	33
To a moderate extent	7	18
To a great extent	1	3
Missing	7	
	46	100
Showed adequate respect for your point of view		
Not at all	1	3
Somewhat	3	8
To a moderate extent	9	23
To a great extent	26	66
Missing	7	
	46	100

Table 2.9 Continued

Table 2.9 DECISION MAKERS' RECEPTIVITY AND APPRAISAL OF STUDENT RESEARCH INTERNS

Variable	No.	Percent
Would provide assistance whenever asked		
Not at all	2	5
Somewhat	4	11
To a moderate extent	7	18
To a great extent	25	66
Missing	8	
	46	100
Displayed enthusiasm		
Not at all	0	0
Somewhat	2	5
To a moderate extent	17	43
To a great extent	21	52
Missing	6	
	46	100
Showed initiative		
Not at all	1	2
Somewhat	3	7
To a moderate extent	15	38
To a great extent	21	53
Missing	6	
	46	100
Kept you informed of work accomplished		
Not at all	0	0
Somewhat	15	38
To a moderate extent	7	18
To a great extent	17	44
Missing	7	
	46	100

Decision makers also evaluated student research interns' conduct on a number of behavioral attributes which were continuously emphasized as important considerations when working in criminal agencies.

An examination of their appraisals of students' undesirable behavior which is reported in Table 2.9 shows that an overwhelming majority reported little or no problem with interns (1) being critical, (2) having an inappropriate appearance, (3) being late for appointments, (4) disturbing agency operations, (5) taking up too much of their time, and (6) failing to complete things. Twenty-one percent of the decision makers did, however, report that the interns use too much research jargon, and several decision makers consistently indicated that interns in their agency did not conduct themselves entirely in a manner which was desirable.

When inspecting decision makers' evaluation of desirable attributes displayed by the research interns, we find that most of them indicated students behaved in a desirable manner, either moderately or to a great extent. Attention should, however, be given to the fact that 38% of the decision makers stated they were kept only somewhat informed of work accomplished. This problem resulted primarily from the lack of contact with decision makers during

two points in the project, Christmas recess and the data analysis stage. Although a majority of the students made periodic checks with the decision maker with whom they were working during these time periods, some students did not, either because of being out of state or because of other commitments.

The above data describe a criminal justice community that responded quite favorably to having interns conduct research evaluation projects in their agencies. The ultimate consequence of this student involvement is agency use of evaluation products. Although all evaluation projects were closely associated with the CAT professor who was responsible for their completion, a student's involvement was sufficient to warrant credit for any agency use of the findings.

Utilization of evaluation findings which were produced by the research interns was determined by asking decision makers the following series of questions.[6]

A. Whether findings had been presented or suggested for presentation
 — for county funding after termination of LEAA monies
 — for financial support from other funding sources
 — to justify current direction of programs

B. Whether findings had been used or suggested for use
 — to make program changes
 — to develop new programs

C. Whether specific plans had been made to use findings in any way (if the answer was positive, they were asked to specify these plans)

Additional information about evaluation utilization was obtained by ascertaining how funding had been used; what happened as a result of using the findings, and why findings had not been used.

Table 2.10 shows that 57% of the decision makers indicated use of the evaluation findings in one to five ways.[7] Of this group, most of the 11

Table 2.10 DECISION MAKERS' USE OF STUDENT RESEARCH INTERN EVALUATION PRODUCTS

Extent of Use	No.	Percent
No Use	20	43%
Used in one way	11	24
Used in two ways	10	22
Used in three ways	3	7
Used in four ways	0	0
Used in five ways	2	4
	46	100

decisions makers who indicated one use of the findings had either made specific plans, or used them for funding purposes, or used them to justify current direction of the programs. Among the 10 decision makers who reported two uses, the most frequent combination was use for program modification and for funding purposes. Three uses of the findings (3 decision makers) included use for justification of future direction, for program modification, and for funding purposes. Most decision makers who reported using the evaluation findings indicated favorable consequences from such uses.

Of the 20 decision makers who indicated nonuse of the evaluation findings, none attributed it to incompetent evaluators. Moreover, only one or two decision makers attributed their lack of use to the quality of the product. Most nonusers gave such reasons as no need for change, no opportunity for use, not their job to use in the ways presented. In short, these data strongly suggest that student research interns can be integrated into the criminal justice community. Furthermore, research products, which students are instrumental in completing, have the potential for use by a majority of decision makers.

PART III: CHANGE AGENT TRAINING EFFECTS

This section begins a transition from a description of the change agent training program to its evaluation. It presents (1) a description of outcome measures and their construction, (2) a comparison of these outcomes by CAT participants and their matched groups, and (3) a search for specific program processes which are associated with levels of goal attainment.

Development of Outcome Measures

The importance of constructing both valid and reliable measures of outcomes cannot be overemphasized. In this study we concentrated on constructing two types of outcome measures that related to the objectives of the CAT program: cognitive measures, in the form of students' understanding of methodological, program development, and planned change concepts; and affective measures, i.e., attitudes toward and propensity to use knowledge in effecting changes while in a low-level position.

I. COGNITIVE MEASURES

The degree to which a student understood scientific methods was assessed by a 36-item test which included basic research concepts pertaining to statistics, research methods, and evaluation. Students were asked to match a list of definitions for each of these three areas to the appropriate concept.[1]

In Table 3.1 the results of an item analysis reveal that all items could be included in determining students' level of knowledge about research. The appropriateness of this test was determined by an examination of reliability estimates and the shape of the distribution of test scores. A Kuder-Richardson estimate of test reliability was .88. The mean was approximately 26 correct responses (73%) and the standard deviation was 6.8.

Table 3.1. AN ITEM ANALYSIS OF RESEARCH CONCEPTS INCLUDED IN THE TEST OF STUDENTS RESEARCH KNOWLEDGE

Research Concept	Item Diff.	Item Discrim.	Research Concept	Item Diff.	Item Discrim.
Discrete data	.84	.19	Stratified sample	.61	.21
Continuous data	.89	.13	Reliability	.89	.13
Nominal data	.95	.08	Spurious relationships	.88	.21
Randomization	.89	.08	External validity	.84	.19
Ordinal data	.77	.21	Internal validity	.79	.40
Significance	.80	.50	Dependent variable	.93	.11
Chi-square	.71	.24	Hypothesis	.97	.03
Inferential statistics	.84	.08	Pearson correlation	.29	.59
Skewness	.97	.03	Post-hoc experimental design	.72	.37
Standard deviation	.83	.27	Performance analysis	.76	.24
Descriptive statistics	.83	.16	One group, pre-test post-test design	.59	.32
			Process analysis	.59	.43
Independent variables	.95	.08	Bivariate analysis analysis of variances	.44	.51
Codebook	.92	.08	Univariate analysis	.55	.51
Random sample	.95	−.03	Efficiency analysis	.59	.43
			Effort analysis	.59	.27
Software	.40	.53	Classical experimental design	.60	.29
			One shot case study	.44	.61
Hawthorne effect	.87	.19	Factor analysis	.59	.48

mean = 27.00
S.E. = 6.45
Kuder-Richardson test reliability = .88

Further validation checks were made by examining the item difficulty and discrimination power indices presented in Table 3.1. Evaluative research concepts covered in the CAT program (last 13 concepts) were found to have higher discriminating power than either general methods or statistical concepts covered in other research courses. One explanation of this difference can be seen by examining the item difficulty index. Most low item discrimination is associated with low item difficulty.

We were unsuccessful in generating valid and reliable measures which quantified students' level of knowledge of program development and planned change concepts. Because of this "assessment void," students' exposure to these areas will be re-examined as indirect indicators of their level of knowledge of these subject areas.

II. AFFECTIVE MEASURES

Students were asked to respond to 56 questionnaire items about developing and implementing change products. The possible responses to these questions were strongly agree, agree, somewhat agree, or do not agree at all. Twenty-nine items reflected one's general attitude toward the content of each statement and 27 items measured the extent to which they would personally behave in the manner specified. These items represented the operational definitions of the concepts associated with (1) developing change products by using a research and development approach and (2) critical issues dealing with implementing change.

Table 3.2 presents the factor structure of the seven items which were found to measure students'

Table 3.2. FINAL FACTOR STRUCTURE OF ITEMS WHICH MEASURES STUDENTS' PROPENSITY TO USE RESEARCH AND DEVELOPMENT PRINCIPLES

Item	Principal Factor Solution (Factor 1)
Criminal justice programs should not be funded unless based on a sound theoretical framework	.511
In attempting to solve problems in criminal justice, I will utilize research methods	.783
In attempting to solve problems in criminal justice, I hope to utilize statistical techniques	.625
I will assume responsibility for evaluating those programs that I have a hand in developing	.638
As a criminal justice program developer, I will use a conceptual framework to guide my research	.648
I will emphasize utilization of research techniques when initiating change	.697
Any new idea or program I develop will be based of theoretical knowledge	.600
Eigenvalue	2.94
Alpha reliability coefficient	.83

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propensity to use the research and development planned change approach.[2] The high factor loadings provide empirical evidence of construct validity and Crombach's alpha of .83, indicates the scale had good internal consistency.

Composite scores consisting of these items formed a distribution which ranges from 3.5 to 13.0.[3] The average score was 9.0 and the standard deviation was 2.5. This approximately normal distribution provides further evidence of its acceptability as a measure for subsequent analyses.

Factor analysis was also used to uncover three factors which reflected important outcome measures for students' general attitudes toward and propensity to engage in change agentry.[4] An inspection of Table 3.3 reveals 6 items clustered together in factor 1, the content of which reflects students' commitment to change while working from below.

In particular, confidence about having the expertise to initiate change, enjoying continuous change, and being assertive correlated with those items which measured commitment to grassroots change agentry.

Factor 2 represents a second indicator of student commitment. These four items measure the extent to which students see continuing to learn and teaching others about change agentry as important aspects of implementing change. This measure can be viewed as indicating a need for continued reinforcement in initiating change.

Factor 3 consists of three items which measured the extent to which students associate initiating change with gaining more authority through promotion. These items are intended to measure students' misconceptions of power, that is, the less students feel promotion is a requisite for initiating change, the less misconception of power. In subsequent analysis it will be necessary to partial out the effects of those students who feel that effecting changes is not possible in any organizational position. Such analytical control will ensure that students who scored low on this scale associate ther responses with a low need for authority to initiate change.[5]

Weighted scale scores were constructed for each of these three factors after making construct and content validity and reliability checks. These checks were conducted by an inspection of the factor loadings, item content, and reliability coefficients reported in Table 3.3. Examination of the shape of each distribution reveals that the scale scores which measured students' commitment to grassroots change agentry approximated a normal distribution over values ranging from 0.6 to 11.2 (mean = 5.9 and the standard deviation = 2.4). The composite scores for learning and teaching others about change and misconceptions of power, however, deviated from normality. Scores for the former measure ranged from 1.6 to 8.3 (mean = 6.3 and the S.D. = 1.7) and for the latter measure ranged from 0.6 to 8.2 (mean = 3.4 and the S.D. = 1.6).[6]

Table 3.3 FINAL FACTOR STRUCTURE OF ITEMS WHICH MEASURES ATTITUDES TOWARD AND PROPENSITY TO ENGAGE IN CHANGE AGENTRY

Items *	Varimax Rotated Factor Matrix		
	(Factor 1)	(Factor 2)	(Factor 3)
I will begin immediately planning to implement change	.686	.205	−.021
Important for entry-level person to be pro-active	.597	−.038	.209
I have expertise in initiating change	.518	.096	.116
I enjoy continuous change	.508	−.020	.288
Desirability of immediate attempting to change rather than waiting	.671	.252	−.069
As a "grassroot" employee, I will attempt to produce change	.739	.109	−.905
Desirability of learning new change strategies	.074	.510	.321
Important for those interested in producing change to teach others	.14	.696	.254
I will learn new change strategies	.088	.696	.081
I see myself as taking the time to teach others how to produce change	.155	.851	.001
The higher one proceeds up the organizational ladder, the more likely to initiate change	−.036	.099	.746
The more authority one has, the more ability to introduce change	.100	.141	.766
"Grassroot" personnel will increase their chances of initiating change if promoted	.136	.179	.562
Eigenvalue	2.44	2.14	2.60
Alpha reliability coefficients	.79	.81	.75

* Some items were paraphrased for display

Comparative Analysis

I. PROGRAM IMPACT ON RESEARCH KNOWLEDGE

An underlying assumption of the change agent program under study was that a research and development approach to change could be used by entry-level personnel. Inherent in this position is the notion that the change agent is familiar with the research process. Hence, one major dimension of the CAT program was designed to provide students with more research exposure through classroom and field research projects. In turn, we expected CAT students would score higher on the 36-item test which measures level of understanding of statistics, research methods, and evaluation than those students in the matched groups. The importance of this outcome cannot be overemphasized, for cognitive measures are standards against which educational programs are often judged.

Tables 3.4 and 3.5 present differences between the CAT group and their matched counterparts in knowledge of research concepts. Deviation of group means from the grand mean and the F value are displayed for three groups of 80 study participants in Table 3.4 and for two groups when undergraduate

scores are separated from graduate students 'scores in Table 3.5.[7]

This analysis shows that students who participated in the CAT program scored significantly higher on the test than students assigned to either of the comparative groups. The adjusted mean deviation score from the grand mean for students in the CAT program (3.90) is significantly different from the adjusted mean deviation scores of students in the regular 1 = -.73 and regular 2 = -2.55).[8] Further evi-

Table 3.4. DEVIATIONS OF CATEGORY MEANS FROM THE GRAND MEAN OF STUDENTS LEVEL OF RESEARCH KNOWLEDGE.[a]

Variable and Category	N	Deviations from the Mean		F
		Unadjusted	Adjusted	
CAT	24	4.29	3.90	8.97***
Regular 1	27	−1.24	− .73	
Regular 2	29	−2.39	−2.55	
		ETA = .42	BETA = .39	
		GRAND M = 26.46		

*** $p < .001$
a. Controlled for Academic Status and Self Actualization

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Table 3.5: A COMPARISON OF UNDERGRAD-UATES' AND GRADUATES' CATEGORY MEANS DEVIATION FROM THE GRAND MEAN OF STUDENTS' LEVEL OF RE-SEARCH KNOWLEDGE.[a]

| Variable and Category | Deviation from Grand Mean | | | | | |
| | Undergraduates | | | Graduate | | |
	N	Unadj.	Adj.	N	Unadj.	Adj.
Type of Program						
CAT	17	4.90	4.30	7	3.35	3.31
Regular	37	−2.25	−1.98	19	−1.23	−1.22
		ETA = .49			ETA = .36	
		BETA = .43***			BETA = .35†	
		Grand M = 24.93			Grand M = 29.65	

† p < .10
*** p = .001
a. Controlled for Self Actualization

Table 3.6 DEVIATIONS OF CATEGORY MEANS FROM THE GRAND MEAN OF STU-DENTS ON RESEARCH KNOWLEDGE FOR DIFFERENT CATEGORIES OF RE-SEARCH EXPOSURE AND INTENSITY OF RESEARCH COURSES.[a]

| Variable and Category | N | Deviation From the Grand Mean | | F |
		Unadjusted	Adjusted	
Number of Research Courses				
1	6	−8.39	−7.06	5.64***
2	19	−3.90	−2.90	
3	12	− .39	− .53	
4-5	12	1.86	2.11	
6	17	4.18	3.91	
7-8	8	4.45	1.49	
		ETA = .65	BETA = .52	
		GRAND M = 27.05		
Part time Research Exposure				
0	43	−1.68	− .91	.99n.s.
1	10	.85	1.90	
2	14	2.59	.80	
3	7	3.95	1.29	
		ETA = .34	BETA = .18	
		GRAND M = 27.05		
Research Course Intensity				
0	10	2.45	1.70	2.02†
1	30	.38	.76	
2	12	1.28	.77	
3	22	−2.33	−2.22	
		ETA = .26	BETA = .24	
		GRAND M = 27.05		

† p < .10
***p < .001
a. Controlled for Academic Status.

dence of this effect can be found by inspecting adjusted mean deviation scores when undergraduate students are separated in the analysis from graduate students. Mean deviation score differences between CAT and regular undergraduates are more pronounced than differences found between CAT and regular graduate students.

In addition to examining the total program impact on students' level of research knowledge, we were interested in determining which program processes were associated with this outcome. In answering this question, interview and questionnaire data collected from students who participated in the CAT and the regular programs were combined.[9] Of particular interest were associations between students' knowledge and their research exposure in the classroom and parttime field experience, and the intensity of the classroom research courses. Since CAT students had received considerably more research exposure and perceived it as being much more intense than other study participants, we assumed that significant relationships between these processes and knowledge among the total sample would further our understanding of the variations in students' knowledge of scientific methods reported above.

Table 3.6 presents the association between three process variables and students' level of knowledge. An inspection of the adjusted mean deviations and betas within categories reveals that the magnitude of the relationship between the number of research courses (formal and independent research courses) and students' knowledge is the strongest (beta = .52). With the exception of 4 students who had taken 8 research courses, the more courses reported, the higher the students' level of research knowledge.

The second process variable, direct parttime research exposure (combination of course-related research and job-related research), appeared to be important when looking at the eta, the coefficient which measures the magnitude of bivariate relationships. However, controlling for other effects

caused this original relationship to diminish (beta = .18). These results show that formal research courses coupled with application through independent research affects knowledge more than the combination of independent study and job-related research.

Research course intensity also had little explanatory power.[10] Looking at the category of students who indicated research courses were not only time consuming and difficult, but also frustrating (N = 22), we find that their mean knowledge score was below the grand mean. This suggests that when research courses become frustrating it may negatively affect learning. Interestingly, when exploring to find the number of research courses taken by this subgroup, we found that 21 of the 22 students had taken only one or two courses, the minimum requirements for graduation. This finding qualifies the original interpretation regarding the negative effects of high course intensity. That is, high course intensity appears to affect students' knowledge only among students with minimal exposure to research course work.

II. PROGRAM IMPACT ON OTHER KNOWLEDGE AREAS

Construction of reliable and valid cognitive measures for other knowledge areas emphasized in the CAT program did not materialize. However, data on students' direct exposure to this knowledge, which were presented in Table 2.1 of the preceding section, offer partial evidence of program impact. The amount of classroom exposure to the subject areas under consideration is not necessarily a valid indicator of how much one knows about a subject. However, if we were to look at a particular group of students, it seems plausible to posit that a strong association between their exposure to a subject area and their knowledge of this subject would provide a useful indicator for similar evaluations where data are lacking. Such is the case in this study. Earlier, we reported strong relationships between the number of research courses taken and students' understanding of scientific methods, and higher average knowledge scores among the CAT group. We also know, from results reported in Table 2.1, that the CAT group reported considerably more research exposure than comparative groups. Since the research subject areas were interrelated with program development and implementation of change subject areas, it is logical to make the following inference. If CAT students received substantially more exposure to program development and planned change knowledge than other students, then the CAT group would have, on an average, a better understanding of these subject areas than their matched counterparts. Results attesting to this fact are reported in Table 2.1 of Part 2. These results reveal that CAT participants unequivocally had received more classroom exposure to program development and planned change knowledge than other study participants. For example, among the comparative group, 50% had never taken a course related to program development and 92% had never taken a course which dealt with proposal writing, areas to which all CAT students were exposed. Also, some of the comparative study groups' participants reported having taken courses which incorporated either discussion or reading about strategies and tactics associated with implementing change. However, few of these students had an opportunity to apply this knowledge in the real world. Conversely, most CAT students were exposed to planned change strategies in classroom discussions, assigned readings, and a major field project.

III. PROGRAM IMPACT ON STUDENTS' PREDISPOSITIONS ABOUT DEVELOPING AND IMPLEMENTING CHANGE PRODUCTS

It was assumed that change agents working from below need, in addition to knowledge about developing and implementing change products, a predisposition to use this body of knowledge. Toward this end, the CAT program was designed to affect students' attitudes and beliefs about the use of research and development principles in developing change, the unimportance of authority in implementing change, and individual commitment toward being a change agent.

Propensity to Use Research and Development Principles

This program outcome measured students' acceptance of an R & D approach to planned change. In the CAT program students were exposed both in the classroom and in the field to the usefulness of conceptualization in developing change products, of research results in problem solving and of program evaluation results in making decisions to adopt changes. Table 3.7 compares the CAT group and their matched groups on propensity to use R & D principles to develop change products.

Table 3.7 DEVIATIONS OF CATEGORY MEANS FROM THE GRAND MEAN OF STUDENTS' PROPENSITY TO USE RESEARCH AND DEVELOPMENT PRINCIPLES.

Variable and Category	N	Deviation from Grand Mean		F
		Unadjusted	Adjusted	
Type of Program				
CAT	23	.45	.03	.86n.s.
Regular 1	26	−.60	−.47	
Regular 2	28	.19	.41	
		ETA = .17	BETA = .15	
		GRAND M = 8.96		

a. Controlled for Grade Point Average and Research Knowledge

When examining group differences, we find that the adjusted mean deviations of the CAT group are close to the grand mean on this outcome (.03), whereas one of the regular group's mean deviation score is -.47 and the other regular group's score is .41.[11] This indicates that the CAT program had no effect on students' propensity to use R & D principles.

We conducted further analyses to determine whether specific program processes designed to affect this outcome could provide future guidance on how to affect students' propensity to use R & D principles. We found no significant relationships between this propensity measure and the number of R & D courses taken, the intensity of these courses, and the extent of parttime exposure to the application of a research and development approach. Hence, this added little to our understanding of why some students scored low and others scored high on the propensity scale.[12]

At this juncture of the analysis, we examined students' propensity to use an R & D approach in developing change products in conjunction with their level of research knowledge. Table 3.8 presents the results of clustering subjects using the propensity scale and knowledge test scores as criteria for defining each cluster.[13]

It was found that 33% of the CAT students compared with 15% of other students formed a cluster

Table 3.8: CONDENSED CLUSTER OF STUDENT RESEARCH KNOWLEDGE AND PROPENSITY TO USE RESEARCH AND DEVELOPMENT PRINCIPLES

Cluster	Descriptive Names	CAT Group		Regular Group	
		N	Percent	N	Percent
C^1	High research knowledge High propensity to use R & D principles	8	33%	8	15%
C^2	High research knowledge Moderate propensity to use R & D principles	5	21	5	9
C^3	Moderate Research knowledge High propensity to use R & D principles	3	13	4	7
C^4	High research knowledge Low propensity to use R & D principles	3	13	2	4
C^5	Low research knowledge High Propensity to use R. & D principles	0	0	5	9
C^6	Moderate research knowledge Moderate propensity to use R & D principles	2	8	8	15
C^7	Moderate/low research knowledge Low/moderate propensity to use R & D principles	2	8	15	26
C^8	Low research knowledge Low propensity to use R & D principles	1	4	8	15

N = 79
X^2 = 14.34
$P < .05$

consisting of high levels of research knowledge and high propensity to use such knowledge (Cluster 1). Similarly, 21% of the CAT group and 9% of the comparative group formed a cluster of students with high knowledge scores and moderate propensity for use (Cluster 2). Clusters 3 and 4 contain slightly higher percentages of CAT students than regular students, whereas Cluster 5 through 8 have a lower percentage of students who participated in the CAT program compared with the regular program.

These results suggest a different interpretation of program effect. If the desired outcome is to affect knowledge and propensity to use such knowledge simultaneously, then these data indicate this has been accomplished. On the other hand, if program impact is assessed on the basis of students' propensity to use R & D principles independently of research knowledge, then the program had no effect on this outcome.

Predispositions About Power and Its Use

In conceptualizing the CAT program, we assumed that low-level personnel have access to different kinds of power, such as expertise, information, interpersonal skills, contacts, etc. Often, however, these types of power are not acquired or utilized because too much attention is given to formal authority as the primary source of power to be used in initiating change in organizations. We contend that authority is a form of "pseudo-power" which, if acquired, may inhibit the initiation of change rather than facilitate it. That is, there are traps in positions of authority which personnel in low-level positions do not have to contend with.

These assumptions led to a deemphasis in the CAT program of the importance of authority when changing inadequacies in criminal justice. Table 3.9 presents a comparison of CAT students and other study participants on the extent to which they associated ability to initiate change with promotion to positions of authority.

Table 3.9: DEVIATION OF CATEGORY MEANS FROM THE GRAND MEAN OF STUDENTS' MISCONCEPTION ON AUTHORITY AS A PRIMARY SOURCE OF POWER.[a]

Variable and Category	N	Deviation from Grand Mean		F
		Unadjusted	Adjusted	
Type of Program				
CAT	25	−.06	−.07	.88n.s.
Regular 1	29	.28	.29	
Regular 2	29	−.22	−.24	
		ETA = .13	BETA = .14	

a. Controlled for Academic Status

Contrary to the intentions of the CAT program, we found that this educational experience had no effect on students' perceived need not to move into positions of authority. When undergraduates' outcome scores were analyzed separately from graduate students' scores, results not reported in table form, there were no changes in the original relationship between the type of program and misconceptions about the type of power needed to implement change. Undergraduates did, however, feel stronger than graduate students about increased authority being associated with increased change.

In searching for an answer to why the CAT program had no effect on this outcome, an analysis was conducted which focused on the effect of the program processes which were designed to affect this outcome. The process variable effects examined were: effects of classroom learning environment, and effects of parttime positions which provided exposure to implementing change.[14] We were unable to uncover any significant relationships between these variables and students' misconceptions about authority. In addition, analyzing this outcome measure in conjunction with other outcomes (cluster analysis) yielded no significant differences between CAT students and other students.

There are several plausible explanations for why the program was unable to affect students' misconceptions about the need for authority in initiating change. First, it was continually stressed in the CAT program that grassroots change agents should concentrate on making changes in reference to their immediate work setting. Hence, power was needed to gain the administrative commitments to experiment with alterations of their job function which, if proven to be effective, could be eventually adopted by the organization. This change agentry orientation deemphasizes individual efforts to change organizational policy which affects the operation of the entire organization. It was said that changes of this magnitude from below were difficult to achieve and therefore efforts should be postponed until a substantial power base could be developed, either as a grassroots change agent working in conjunction with the group, e.g., a police fraternal organization, or as a change agent with some authority.

Some CAT students apparently did not accept change agentry from below which was advocated in the program. Partial evidence for this conclusion was provided by responses to a planned change problem-solving exercise which was part of the questionnaire used in the study. Study participants were asked to identify one type of change or new idea which they felt could be initiated in positions of little or no authority. A content analysis of these responses revealed that most CAT students (86%) indicated an organizational policy change, rather than a change in their immediate work setting, whereas only 42% of other students indicated a policy change. Possibly, CAT students' strong need to make policy changes from entry-level positions conflicted with the program's deemphasis on the need for authority to initiate change.

A second plausible answer for the lack of program impact on students' need for authority is that CAT students did not comprehend why the program deemphasized authority as a primary source of power to initiate change. Informal interviews with a number of CAT graduates revealed that they remembered discussions and readings indicating inverse relationships which exist between discretion and authority as well as discussions about trappings of high-level positions which inhibit the initiation of change from above. However, this sample also stated they did not associate this information with the program's position that authority was a form of "pseudo-power."

IV. INDIVIDUAL COMMITMENT TO CHANGE AGENTRY

Commitment to Effecting Change from Below

It has been said that change agents enjoy the process of changing and they are confident and assertive people. (Gardner 1964). Perhaps the most important result of the CAT program is for its graduates to believe that they have the ability as well as the personal desire to make change happen during the early years of their career. Table 3.10 presents evidence that students' commitment to grassroots change agentry was affected by the CAT program.

The CAT students' adjusted mean scores are significantly higher than scores of the comparative groups, 1.65 compared with -.69 and -.76, respectively. On the average, CAT students indicated more personal commitment to change while working from below than fellow students.

Table 3.10: DEVIATION OF CATEGORY MEANS FROM THE GRAND MEAN OF STUDENTS' COMMITMENT TO CHANGING FROM BELOW.[a]

Variable and Category	N	Deviation from the Grand Mean		F
		Unadjusted	Adjusted	
Type o Program				
CAT	25	1.38	1.65	11.14***
Regular 1	28	− .70	− .69	
Regular 2	29	− .51	− .76	
		ETA = .38	BETA = .46	
		GRAND M = 5.87		

*** $p < .001$

a. Controlled for Commitment to Learn and Teach Others About Change Agentry

We also discovered that the classroom learning environment, consisting of exposure to the five previously discussed teaching modalities, was the most important program component in attempting to affect students' commitment to grassroots change agentry. (Table 3.11.). When analyzed simultaneously with planned change course exposure and parttime field exposure to planned change, classroom en-

Table 3.11: DEVIATION OF CATEGORY MEANS FROM THE GRAND MEAN OF STUDENTS' COMMITMENT TO GRASSROOT CHANGE AGENTRY FOR DIFFERENT CATEGORIES OF THREE PROCESS VARIABLES.[a]

Variable and Category	N	Deviation from the Grand Mean		F
		Unadjusted	Adjusted	
Classroom Environment				
0	21	− .71	− .64	3.93**
1	23	− .72	− .57	
2	18	.21	.07	
3	8	1.26	1.46	
4	5	3.52	3.24	
		ETA = .48	BETA = .45	
		Grand M = 5.95		
Field Exposure to Planned Change				
None	33	− .70	− .11	1.77n.s.
Some	8	1.31	1.34	
Extensive	34	.37	− .21	
		ETA = .29	BETA = .20	
		Grand M = 5.95		
Classroom Exposure to Planned Change				
None	9	− .28	− .46	.45n.s.
1	19	− .55	− .08	
2	14	− .47	− .33	
3	23	− .56	.13	
Extensive	10	.66	.71	
		ETA = .22	BETA = .15	
		Grand M = 5.95		

** $p < .01$

a. Controlled for Commitment to Learn and Teach Others about Change Agentry

vironment emerged as the only significant program component (beta = .45).[15] An examination of the adjusted mean deviations for various categories of this variable reveals that those students who were exposed to four or five teaching modalities scored the highest on the scale measuring commitment to changing while working from below (adjusted mean deviation = 3.24). Students who had been exposed to being frustrated by three or more professors, frequently involved in decision making, and frequently treated like a colleague, reported the next highest commitment scores (adjusted mean deviation = 1.46). Interestingly, frequent treatment of students like colleagues without exposure to other teaching modalities had no effect on commitment to change from below.

These findings should not be interpreted as meaning that practical experience and formal course work dealing with effecting changes from below are unimportant. That is, this study's measures of field and classroom exposure to developing and implementing change were indicators of students' exposure to changing in general, not necessarily changing from below. They were constructed in this manner because the CAT program was the only

formal academic training at the University of Maryland which provided student an opportunity to study and experience grassroots change agentry in the classroom and in the world of practice. Thus, questions regarding the importance of formal course and field exposure to changing from below cannot be answered in this study.

Since the CAT program was designed to train students to use a R & D approach while working from below, it is of interest to compare group differences on commitment to grassroot change agentry in conjunction with their propensity to use R & D principles. Table 3.12 provides these results which were generated by cluster analysis.

Fifty-six percent of the CAT group compared with 18% of the comparative group fell in the clusters for high commitment to grassroots change agentry/high or moderate propensity to use R & D principles (C_1 and C_2), and 12% of the CAT students and 16% of the other study participants fell in the cluster defined as moderate commitment to grassroots change agentry and high propensity to use R & D principles. (C_3). These results show that a majority of the CAT participants saw an R & D approach as plausible for grassroot change agentry. However, the 20% of the CAT students who fell into C_6 and C_7 suggest that some students did not accept the idea of initiating changes from below by using scientific methods.

Learning More and Teaching Others About Change

A constant threat to change agents is organizational cooptation, a process by which an individual becomes an actor in carrying out his duties in a routine manner. When a change agent is coopted by the organization in which he or she is employed, commitment to change agentry is converted into organizational loyalty. One way of reducing the chance of this happening is to continue to learn more about new techniques and strategies of change and teaching others how to produce desired changes.

Table 3.13 presents a comparison of the CAT group and other students on their propensity to learn more and to teach others about change.

Contrary to our expectations these results show that CAT students, on an average, reported less propensity to continue learning and teaching others about change agentry (adjusted mean deviation = -.91; whereas the mean deviation scores for the regular groups were .20 and .59). An analysis of the effects of the three process variables — course exposure to planned change material, classroom environment, and field exposure to developing and implementing change — failed to increase our understanding of the results found in Table 3.13. It appears that the CAT program had an adverse effect on commitment to learn more and to teach others about change agentry in general, but a positive effect on commitment to grassroots change agentry as discussed earlier.

Table 3.12: CONDENSED CLUSTERS OF STUDENTS COMMITMENT TO GRASSROOT CHANGE AGENTRY AND PROPENSITY TO USE RESEARCH AND DEVELOPMENT PRINCIPLES.

Cluster	Descriptive Names	CAT Group N	CAT Group Percent	Regular Group N	Regular Group Percent
C_1	High commitment to grassroot change agentry High propensity to use R & D principles	8	32%	6	11%
C_2	High commitment to grassroot change agentry Moderate propensity to use R & D principles	6	24	4	7
C_3	Moderate commitment to grassroot change agentry High propensity to use R & D principles	3	12	9	16
C_4	Low commitment to grassroot change agentry High propensity to use R & D principles	0	0	3	6
C_5	Moderate commitment to grassroot change agentry Moderate propensity to use R & D principles	3	12	14	25
C_6	Moderate/low commitment to grassroot change agentry Low/moderate propensity to use R & D principles	2	8	13	23
C_7	Low commitment to grassroot change agentry Low propensity to use R & D principles	3	12	7	12

$$x^2 = 14.25$$
$$N = 81$$
$$p < .05$$

Table 3.13: DEVIATION OF CATEGORY MEANS FROM THE GRAND MEAN OF STUDENTS' COMMITMENT TO LEARN MORE AND TEACH OTHERS ABOUT CHANGE.[a]

Variable and Category	N	Deviation from the Grand Mean Unadjusted	Deviation from the Grand Mean Adjusted	F
Type of Program				
CAT	25	−.48	−.91	6.11*
Regular 1	28	−.02	.20	
Regular 2	29	.43	.59	
		ETA = .22	BETA = .37	
		Grand M = 6.31		

* $p < .05$ (two-tailed test)
a. Controlled for Students' Commitment to Changing from Below

Results from the cluster analysis provided more understanding of the CAT program's effect on students' commitment. Table 3.14 shows that when students' commitment to learn and to teach others about change agentry was analyzed in conjunction with their commitment to grassroot change agentry, 25% of the CAT group compared with 9% of the regular group fell in the high commitment cluster (C_1). Interestingly, 25% of the students who partici-

pated in the CAT program, compared with 2% of the regular group, reported a high commitment to grassroot change agentry but a low commitment to learning and teaching others about change (C_4).

When the first-year CAT group was separated from the second-year group, (results not reported in table form) we found distinct differences between the two experimental groups. Of the 9 CAT students who fell in the high/moderate clusters (C_1, C_2, and C_3), a majority participated in the first-year of the experiment whereas a majority of the second-year CAT students were found in Cluster 4, high commitment to grassroot change agentry but low commitment to learning and teaching others about change in general. This difference between first-year and second-year study participants was not found within the comparative group.

One plausible explanation for differences in the CAT groups is educational burnout. The second-year group experienced considerably more end-of-the-year frustration in completing their individual change and evaluation projects than did the first-year group. It is possible that the second-year CAT students associated learning and teaching others about change with school more than the first-year group, hence, educational burnout may have produced an adverse effect on the propensity to learn more and teach others about change.

Table 3.14 CONDENSED CLUSTERS OF STUDENTS' COMMITMENT TO GRASS ROOTS CHANGE AGENTRY AND LEARNING AND TEACHING OTHERS ABOUT CHANGE.

Cluster	Descriptive Names	CAT Group N	Percent	Regular Group N	
C_1	High commitment to grass root change agentry High commitment to learning and teaching others	6	25%	5	9%
C_2	High commitment to grass root change agentry Moderate commitment to learning and teaching others	2	8	4	7
C_3	Moderate commitment to grass root change agentry High commitment to learning and teaching others	1	4	13	22
C_4	High commitment to grass root change agentry Low commitment to learning and teaching others	6	25	1	2
C_5	Low commitment to grass root change agentry High commitment to learning and teaching others	0	0	2	4
C_6	Moderate commitment to grass root change agentry Moderate commitment to learning and teaching others	4	17	15	26
C_7	Low/moderate commitment to grass root change agentry Moderate/low commitment to learning and teaching others	5	21	17	30

$$N = 81$$
$$x^2 = 18.74$$
$$p < .01$$

Summary and Conclusions

This experiment in change agent training is the first of its kind in criminal justice education. It entails manipulating a set of prescriptive variables to effect training objectives assumed to be prerequisites for college graduates implementing change while working from below.

Evidence was found that the CAT program clearly had impact on two of the most important training objectives, students' personal knowledge and their commitment to change agentry from below. Moreover, indirect evidence showed that the program positively affected student knowledge regarding the program development and planned change subject areas.

Contrary to our expectation, the CAT program did not affect students' perceptions of the unimportance of authority in initiating change. The program also had no effect on students' propensity to use research and development principles and had an adverse effect on their commitment to learn and teach others about change agentry. However, program effects were found when these latter two outcomes were analyzed in conjunction with students' research knowledge and commitment to grassroot change agentry. It was found that when students' research knowledge and their propensity to use R & D principles were considered simultaneously, a majority of

the CAT participants clustered in the most desirable categories, whereas a majority of other study participants clustered in less desirable categories. When students' commitment to grassroot change agentry was analyzed simultaneously with their propensity to use R & D principles, commitment to changing from below, and learning and teaching others about change agentry, we found similar results.

These results suggest that the CAT program, in reality, placed more emphasis on students' research knowledge and commitment to grassroot change agentry than on other training objectives. The fact that the program seemed to have had an impact on students when propensity to use R & D principles and their commitment to continue to learn and teach others about changing was examined in conjunction with other training outcomes suggests that students saw these ends as secondary and only important in conjunction with other outcomes. Some CAT students viewed one of these outcomes as important, but not another, and several students were not affected at all by the CAT program.

Just as clearly as the program affected most of the training objectives, it failed to affect students' misconception of the need for authority in initiating change. Since this outcome is assumed to be a necessary condition to effecting change from below, it is obvious that in the future more attention has to be directed toward achieving this end.

The aftermath of experimentation with change agent training is as exciting as the experiment itself. There has been continuous contact with most graduates of the CAT program. Moreover, the university has incorporated the program into its regular day school curricula and is introducing the two formal courses into the evening college law enforcement curriculum. In addition, the Criminal Justice Evaluation Unit, to which most student research interns are assigned, is now receiving county funding after the termination of the federal grant. It is apparent that the model has been formally institutionalized. The importance of this adoption is that knowledge gained from this study can assist in continued experimentation.

In this final section it is important to discuss in detail the above post experimental events. Furthermore, other academic institutions that are interested in incorporating this model or in experimenting with other ideas about change agentry may find useful operating principles that are derived from this experiment as well as implications for future research.

Postgraduate Reinforcement

Educators have traditionally assumed that knowledge, attitudes, and skills learned in college are transferred to the world of practice. Such an assumption implies that the effects of higher education on students are sufficiently strong to prevent their loss, once graduates enter their chosen career.

Contrary to this assumption, we expect that pressures to conform to the norms of criminal justice agencies will be strong enough to prevent utilization of knowledge and skills in areas such as change agentry. Hence, it is considered important to introduce reinforcements after CAT students complete the formalized dimensions of the program described in this study. This postgraduate reinforcement entails maintaining supportive relationships with CAT participants for several years after graduation.

Since implementing the pilot program in 1973, there has been two-way communication with 35 of 40 students who received partial or complete exposure to the program during its first three years of operation. Various mechanisms are being used to encourage these students to "keep in contact." The most well-received mechanism is an annual social which honors the most recent graduates of the CAT program. This event is held at the end of each academic year and all former CAT graduates are invited by written or personal invitations; approximately 50-60% have attended each year. The importance of this activity is that members of particular graduating classes have an opportunity to reunite under conditions where the "shop talk" deals with change agentry.

Another reinforcement mechanism is the involvement of former graduates in training other students to become change agents. Each year they are asked to present change projects on which they are working and also to attend various class discussions where they have an opportunity to share their experiences in change agentry. In addition, there have been special seminars conducted by former CAT students for current members of the program who are interested in preparing themselves for the job market. A final type of involvement is the participation of former graduates in the introductory stages of the CAT program by sharing with new groups of students their positive and negative experiences as former CAT participants. Approximately 50% of former CAT graduates have responded to this reinforcement mechanism. A third type of reinforcement mechanism is written communication. Several personal letters prepared by the CAT professor as well as conference papers have been sent to former CAT graduates to inform them of the status of the program. In addition, we anticipate developing an annual newsletter which includes information about CAT graduates and their efforts to initiate change while working from below.

Other mechanisms of reinforcement are less formal; for example, the CAT professor assisting graduates in development and implementation of change products, encouraging individuals to initiate change, and providing psychological support upon request. It is assumed that these informal mechanisms are equally important as the formal ones.

The reinforcement mechanisms discussed above are not presented as new ideas. What is innovative, though, is that a representative of the university community assumes responsibility for maintaining relationships with former graduates rather than students assuming this responsibility. Moreover, focusing these reinforcements on change agentry is, indeed, establishing a precedent.

Operating Principles For University - Based Change Agent Training

Planning for innovation is a time-consuming enterprise and the CAT program is no exception. It has taken five years to arrive at the juncture in time where suggestions can be offered to other educators who are interested in change agentry. The educational model being discussed has been fully adopted as a viable entity which complements the curricula of the Institute of Criminal Justice and Criminology at the University of Maryland. Beginning in the 1976-77 academic year, university approval was granted to establish two formal courses as regular offerings in the advanced undergraduate law enforcement curriculum. Moreover, beginning in the 1977-78 academic year, the evening college,

which provides education for in-service criminal justice personnel, will adopt these two courses as regular offerings in their law enforcement curriculum. Finally, in August 1977, the Prince George's County government signed a year-by-year contract with the University of Maryland to continue funding their Criminal Justice Evaluation Unit to which student research interns are assigned in order to participate in ongoing county evaluation projects. This latter adoption came after three years of federal funding.

Based on the experience gained from the experiment under study, we offer nine operating principles which may be helpful to others. The first principle, which is of primary importance, is that **experimentation under test conditions should accompany any plans for innovation in an educational setting.** This means time should be allocated to developing a conceptual framework, deriving educational objectives from this conceptualization, constructing model components to achieve these components, and testing the model using the degree of sophistication allowed by the testing situation. The primary benefit from this approach is the vast amount of knowledge gained which can be used to continually update the model.

Ideally, adoption should follow completion of the formal evaluation; however, the experimenters may find themselves in a position to institutionalize before all data analyses have been completed. It may happen, as in this project, after assessment of the political environment of the university, that a push for adoption may be based only on preliminary data analysis. In such a situation, the experimenters may not know whether their model is better than existing models, but there should be evidence that no detrimental effects can occur from this adoption.

Principle two is that **the orientation of the change agent training should be compatible with the curriculum in which it operates.** Of utmost importance is compatibility of the change agent training orientation and the faculty orientation of the department in which it is implemented. In general, the University of Maryland's fulltime faculty are theoretical and research oriented, which creates a social-science educational perspective. The idea of training is traditionally not compatible with this orientation. However, since the CAT program focused on conceptualization and policy research, the program was viewed as complementing the overall efforts of the department. The director was a strong advocate of all dimensions of the program, including the concept of preparing graduates as agents of change while working from below. This support was invaluable and necessary for completion of the project. Possibly a change agent training model, as conceived in this experiment, would not be as compatible in departments whose faculty support a traditional "nuts and bolts" training perspective or a professional perspective. Hence, implementation within such perspectives may require reconceptualizing the idea of change agentry while working from below.

Compatibility with the general orientation of the student body is also important. Like most criminal justice undergraduate programs, law enforcement and criminology majors at the University of Maryland are generally interested in more practical elements of the curricula than in the theoretical or research dimensions. Among graduate students, the distribution is generally bimodal, some oriented toward criminological theory and basic research and others oriented toward administrative or legal studies. Neither of these orientations are very compatible with the underlying values of the CAT program, which attempts to integrate theory, research, and practice. As evidenced in this experiment, a program can operate within a student body whose orientation is as described above. However, searching for students with orientations similar to those of the CAT program becomes time consuming and frustrating. Possibly, identification of students for the CAT program would be enhanced in a curriculum which requires students to declare areas of concentration early in their undergraduate or graduate program.

The third operating principle is that **the program should be designed so that varying combinations of its components are available to students.** One common concern expressed by CAT participants, especially graduate students was that a one-year commitment was extremely difficult to make. They indicated that, if the program were designed so particular modules of interest could be chosen, then appeal for the program would be enhanced. These expressed concerns and the study results illustrated below resulted in a program modification which allows four options, all of which are intended to lead to change agentry while working from below. Option 1 is enrollment in the formal course, which focuses primarily on the planning stages of the change process. This option is available for those students who are primarily interested in planning and program development, designing evaluation projects and proposal writing, and not necessarily the second formal course or the research practicum. The second option is to take only the second formal course, which focuses primarily on implementation of change products. Selections of this option will expose students to a cursory view of developing change products, but it will provide extensive exposure to change strategies and tactics necessary in selling new ideas while working from below. Option 3 is for students who are more research oriented, or want exposure in the world of practice. This option is the two-semester evaluation practicum. Option 4 consists of the entire package which most students involved in the experiment experienced. This latter option will consist of a small cadre of students who are interested in intensive exposure to developing new ideas and implementing these ideas using research and development principles.

The empirical basis for making this program modification was study results from the block clustering analysis. These results revealed a similar pattern when analyzed for students' predispositions toward

effecting change from below, propensity to use research and development principles, and commitment to learn and teach others about change agentry. The various emerging clusters can be possibly interpreted as outcomes which fit the program options discussed above. For example, students who fell into the cluster defined as high commitment to change from below and high propensity to use research and development principles may be those students who were "suited for" the entire CAT program. Students in the cluster for high commitment to change agentry from below and moderate or low propensity to use research and development principles may be more attracted to the options involving formal courses or a single course dealing primarily with implementing change. In short, providing a variety of options may make the program attractive to a larger group of students.

The fourth operating principle is that **students entering the CAT program should have preparatory work courses in introductory research methods and statistics courses prior to entering the program.** The evaluation results uncovered a strong relationship between the number of research courses (combination of formal and research practicums) and students' research knowledge. An examination of these results showed that three introductory courses and three evaluation research courses offered in the CAT program seemed to optimize knowledge related to scientific methods.

One practical problem, however, emerged in our experiment regarding the requirement of three preparatory research courses. That is, most law enforcement and criminolgy majors at Maryland postpone completion of the curricula's research requirement for entry into the CAT program, such as psychological testing, creates undue problems, and, in some cases was the reason why students did not enter the program. In the fall of 1977 the requirement of having completed psychological testing was lifted but with a strong suggestion that it helps prepare one for the research experience received in the CAT program.

Expanding the CAT program, at least in part, to our evening college curriculum poses a different problem among in-service undergraduate students who are primarily policemen. Since this curriculum does not require any research courses for graduation, we have introduced only one prerequisite introductory research methods course which covers major concepts necessary for completing the formal evaluation course of the program. Those students who are also interested in the two-semester evaluation practicum may take an additional preparatory statistics course which is necessary for completion of the work assigned in the experimental component. Whether this is a viable alternative cannot be determined until after the first group of students has completed the program.

A fifth principle pertains to the learning environment created in the classroom. This principle is that **students should participate in the learning process,** be exposed to collaborative decision making where there is a colleague atmosphere, and experience continuous change, but not without built-in mechanisms to handle frustration. Our study showed that a learning environment where conflict and subsequently frustration are viewed as healthy is important in preparing students to effect change while working from below. When creating this type of environment, we have found it is important to have conflict stem from participatory management principles rather than from the traditional Weberian classical model. Moreover, it is imperative to build in mechanisms for handling this frustration in an environment that allows students the freedom to be expressive. We found that two effective methods for handling frustration were continual professional concern about students' frustration and the continual offering of alternatives as to how the frustration could be alleviated. In this way, the student's and professor's needs could be taken into account. In summary, if a learning environment can be established which equally involves students and teachers and subsequently produces commitment to the educational processes, then one necessary condition for goal attainment has been created.

Teaching modalities which create this type of classroom environment are designed for a small class. Hence, a sixth principle is that **the classroom size should be restricted to approximately 15 students.** The need for small classroom size creates a dilemma which may confront others interested in establishing the model under study. On one hand, graduate curricula are already structurally designed for the CAT program (i.e., small seminars are already established). However, in most universities this prevents advanced undergraduates from participating in such courses. Conversely, establishing the CAT program as a sequence of senior level courses allows both undergraduate and graduate students to participate in the program, but justification for small size class in undergraduate programs may be difficult at a time when legislators and administrators allocate monies on the basis of student enrollments. Possibly, this problem may be overcome by implementing a CAT program as a complement to an already established honors program which is traditionally a series of small seminars in most universities.

The final three operating principles relate to the experiential dimension of the program. This component is viewed as essential for the development of evaluation research skills. We also assume that it facilitates learning about change agentry while working from below. However, our study provides results that only indirectly substantiate its value in terms of change agentry. First, we know that it was a frustrating and yet an emotionally challenging experience for the students, which was an important ingredient of the classroom environment. Second, we know it created opportunities for many of the CAT participants to use their evaluation projects as a basis for the major change project which was

a requirement of one of the formal courses in the program.

When implementing this program dimension, principle seven should be carefully considered. This principle is that **the student research interns' roles should have legitimacy in the world of practice.** That is, students' evaluation projects should be viewed as products for agencies to use or not use, rather than as products to fulfill a course requirement. We were fortunate in creating a complementary model (the Criminal Justice Evaluation Unit) which established legitimate research intern roles for most of the CAT Participants. There were, however, several students assigned to agencies in another county with in-house planning and research units in which legitimate roles were established by the fact that research was an on-going activity. In addition, in the 1976-77 program year, CAT participants were assigned to an evaluation project which was being conducted by a consulting firm. Legitimacy was also established in this situation. However, these students did not receive as much exposure to the dynamics of operating agencies as their peers who were working directly with an agency.

Principle eight addresses student commitment. It states that **student research interns should make a two-semester commitment to their evaluation project.** This principle is important in that it is impossible in one semester to train students and at the same time produce a quality final product. From the student's point of view, it is important to also assign them to evaluation projects which are of interest could not be found, we have found that students were satisfied with any project as long as it was being conducted in an agency of interest.

The importance of this principle cannot be overemphasized, for the amount of time spent on the field project exceeds the time normally spent in two, three-semester credit courses. Normally the busiest time of the project occurs at the end of the academic year when graduating CAT seniors are still working after their peers have completed all of their course work.

The final operating principle addresses the amount of guidance which is necessary for students to complete their evaluation projects. This principle is that **university personnel in charge of the CAT program should expect to provide continuous consultation throughout the duration of the project.** Unlike research projects in conjunction with regular course requirements, continuous assistance has to be provided to most undergraduate and graduate students in completing their evaluation product. This is primarily a function of the evaluation strategy being employed. Most projects in the CAT program entailed collecting primary data by questionnaires or interviews, analyzing these data using multivariate statistical techniques, and preparing a final report which highlight the results and deemphasize the procedures for obtaining these results. In the experiment under study, research assistants for the Criminal Justice Evaluation Unit were instrumental in coordinating those evaluation projects involving federally funded programs. However, even though this assistance was available, the CAT professor assumed responsibility for checking all decisions made at each phase of the evaluation project. In short, guidance rendered for each project was equivalent to directing a master's thesis.

In conclusion, the nine operating principles presented above are based on our experience in developing and implementing one change agent training program in a university setting. These are suggestions, not absolutes, for this is only a single experiment dealing with change agentry. More experimentation is needed which includes our ideas as well as ideas from other educators. Our basic assumptions about effecting change from below, on which the CAT program under study is based, have not been empirically validated. Hence, a follow-up longitudinal study is needed which involves CAT graduates from each of the four program years as well as a sample of other college graduates. Results from this study will be invaluable for future educational development concerning preparation of college graduates for grassroots change agentry roles. Until such time as results from basic research endeavors are available, we present this study of our experience in change agent training as evidence that new initiatives in criminal justice education are possible. We hope this new direction will stimulate others to invest similar energies in trying to offer improvements to the field of criminal justice.

NOTES FOR PART 1

[1]Change as an important concern in criminal justice is high-lighted in the President's Commission on Law Enforcement (1967), the National Advisory Commission on Criminal Justice Standards and Goals (1973), and several mono-graphs dealing with the management of change which stem from the fourth Symposium on Law Enforcement Science and Technology (National Institute of Law Enforcement and Criminal Justice, 1973 a, b).

[2]For a discussion of problems associated with low-level police officers organizing to challenge management, see Burpo (1970) and the National Advisory Commission (1973). Also, Toch et al. (1975) present a change agent project which illustrates how low-level policemen can become in-volved in systematic organizational reform. More recently, Stillwell and Abernethy (1977) report on attempts to change while working from below in a low-level evaluator's role in a state attorney's office.

[3]The increased emphasis on higher education in criminal justice is evidenced by the growth in the number of college programs since 1965. Kobetz (1975) reports that the num-ber of two-year, four-year, and graduate programs in this field has grown from 209 in 1965-66 to 1,245 for the 1973-74 academic year.

[4]Our literature search found no discussion dealing specifical-ly with the preparation of college graduates to be change agents working from below. There is literature which deals with preparing graduates for planned change in research and management positions. Fairweather (1967) discusses an ecological psychology program at Michigan State Uni-versity which emphasizes change by experimental social innovation. Lippitt (1973) presents a case study which deals with developing change model skills among graduate students at George Washington University. Coplan (1974) describes a change-oriented curriculum at the University of Maryland which is designed to prepare doctoral students for change agent roles in education.

[5]A cursory analysis of course offerings presented in Kobetz (1975) is one data source for curricula changes discussed in this paper. Further, personal knowledge of new directions being initiated by colleagues in other universities provided another source of data. Finally, since important new initia-tives should have been published, a literature search was conducted for this specific purpose, an exercise that pro-duced no additional evidence as to new directions in crim-inal justice education. Published works concerning this phe-nomenon are concerned primarily with arguments such as Brown's (1974) support of liberal arts education, with an emphasis on social science discipline for policemen, or dis-cussions dealing simply with the need for criminal justice education in the modern university (Shenkman, 1974).

[6]See LeFave (1965) for an excellent discussion of low-level police officers' discretion.

[7]These authors present three other training approaches that were seen as inappropriate for training preservice college students:

Specific skill learning (focuses on specific skills of change agentry which can be incorporated into one's normal job function).

Whole-role training (focuses on preparing individuals for a new organizational role consisting primarily of change agentry functions).

Whole-system training (focuses on training people of organizational families, such as police patrolman-sergeant-administrator).

[8]A post hoc examination of the undergraduate study parti-cipants' final GPA's after completing all course work re-vealed the three group average scores were approximately the same, slightly above 3.00.

[9]In two cases the interview was conducted over the tele-phone and in one case the interview had to be mailed to a participant out of state.

[10]Data for assessing decision makers' responses to student research interns were part of a larger study on utilization of program evaluation products which was completed by stu-dents in conjunction with the operation of a county-based evaluation unit. This study's objective was to assess the effectiveness of a unit staffed by one county official, the professor in charge of the CAT program, and two graduate research assistants. See Johnson (1977) and Kleinsorge (1978) for detailed descriptions and research findings that pertain to the utilization project.

[11]See Kim and Kohout (1975:405-416) for a discussion of two other analysis of variance procedures, hierarchical and regression solutions.

[12]Although the block clustering technique clusters on both cases and variables alternately switching from one to the other on each pass through the data, its use in this study was similar to procedures which only clusters on subjects. Specifically, the cluster analysis was performed on cases with respect to only two relatively uncorrelated variables being considered simultaneously. Convergence of the var-iables did not take place until the last pass through the data thereby resulting in essentially a clustering of sub-jects. See Dixon (1975:339-355) for a description of the computer program used to perform this analysis.

NOTES FOR PART 2

[1]Required readings for this course were assigned from the following material:

Adams, Stuart
1975 *Evaluative Research in Corrections.* Washington, D.C.: U.S. Government Printing Office.

Albright, Ellen, et. al.
1973 *Criminal Justice Research: Evaluation in Criminal Justice Programs.* Washington, D.C.: U.S. Government Printing Office.

Fairweather, George W.
1972 *Social Change: The Challenge to Survival.* Morristown, New Jersey: General Learning Press.

Havelock, Ronald G., and Mary C. Havelock
1973 *Training for Change Agents.* Ann Arbor, Mich.: Institute for Social Research.

Johnson, Knowlton W.
1975 "A Report on the Development and Validation of Procedures for Process Evaluation." A working Draft. College Park, Maryland: Institute of Criminal Justice and Criminology, University of Maryland.

Lejins, Peter P., and Thomas F. Courtless
1973 *Justification and Evaluation of Projects in Corrections.* College Park, Md.: Institute of Criminal Justice and Criminology, University of Maryland.

Maltz, Michael D.
1972 *Evaluation of Crime Control Programs.* Washington, D.C.: U.S. Government Printing Office.

Suchman, E.
1967 *Evaluative Research.* New York: Russel Sage Foundation. Temple University Center for Administration for Justice.

1975 *New Directions and Initiatives in Criminal Justice.* Philadelphia, Pa.: Temple University.

Twain, D., E. Harlow, and D. Mervin
1970 *Research and Human Services: A Guide to Collaboration for Program Development.* New York: Jewish Board of Guardians.

Velde, Richard W., and Charles R. Work
1975 *A Compendium of Selected Criminal Justice Projects.* U.S. Department of Justice, Washington, D.C.

Weiss, Carol H.
1972 *Evaluation Research.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

[2]Readings were assigned from the following material:

Bennis, W.G., K.D. Benne, and R. Chin
1969 *The Planning of Change.* New York: Hold, Rinehart and Winston.

Dyer, William G.
1972 *The Sensitive Manipulator.* Provo, Utah: Brigham Young University Press.

Havelock, Ronald G.
1973 *Planning for Innovation.* (Fourth Printing). Ann Arbor, Michigan: Center for Research on Utilization of Scientific knowledge.

Havelock, Ronald G.
1973 *The Change Agent's Guide to Innovation in Education.* Englewood Cliffs, New Jersey: Educational Technology Publications, Inc.

Kaufman, Herbert
1971 *The Limits of Organizational Change.* University, Alabama: University of Alabama Press.

National Institute of Law Enforcement and Criminal Justice
1973 "Innovation in Law Enforcement," presented at the Fourth National Symposium on Law Enforcement Science and Technology conducted by the Institute of Criminal Justice and Criminology, University of Maryland.

National Institute of Law Enforcement and Criminal Justice
1973 "The Change Process in Criminal Justice," presented at the Fourth National Symposium on Law Enforcement Science and Technology conducted by the Institute of Criminal Justice and Criminology, University of Maryland.

Peabody, G., and P. Dietterich
1973 *Powerplay: A Simulation Dealing with Collaboration, Negotiation and Coercion.* Naperville, Illinois: Powerplay, Inc.

Robbins, Stephen P.
1974 *Managing Organizational Conflict.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Toch, H., D.J. Grant, and R.T. Galvin
1975 *Agents of Change: A Study in Police Reform.* Cambridge, Massachusetts: Schenkman.

Toffler, Alvin
1970 *Future Shock.* New York: Bantam Books.

[3]The comparative analysis regarding student frustration included only data on CAT students. It was felt that comparing student and professor response to frustration which were created within the CAT program with those created in the regular program would more clearly show how frustration was being used as an experimental variable.

[4]Johnson et. al. (1976) has a detailed description of this evaluation strategy which emphasizes uncovering processes of a program that may be important in goal attainment. This is basically an alternative to impact evaluation, which attempts to determine the success or failure of a program.

[5]The Criminal Justice Evaluation Unit (CJEU) was comprised of one university professor (one-third time), two graduate research assistants (half time), and a county-employed criminal justice analyst who coordinated the unit's research activities as part of his normal job function. University staff worked closely with the research interns throughout the duration of the evaluation projects. The CJEU was financed mainly by a three-year grant awarded by the Maryland Governor's Commission on Law Enforcement and the Administration of Justice. Supplemental funds were also provided by the Institute of Criminal Justice and Criminology of the University of Maryland. See Johnson et. al. (1976) and Kleinsorge and Frazier (1978) for a detailed description of this model.

[6]These five ways for using the evaluation findings made up a composite score measuring actual evaluation utilization. A Guttman scalogram analysis yielding a coefficient of reproducibility of .86 aided in making relative statements about the patterns of utilization.

[7]Most decision makers who suggested use of findings stated that their superiors acted favorably, and hence, in subsequent discussions "suggested use" and "use" will be considered synonymous.

NOTES FOR PART 3

[1]An undergraduate research assistant accumulated a list of concepts and definitions taken from course descriptions and textbooks which were used in introductory undergraduate courses taught at the University of Maryland. Selection of the final 36-item test was based on analysis of responses to a pretest administered to 50 undergraduates, several graduate students, and former CAT graduates.

[2]Seventeen items, 9 attitudinal and 8 propensity-related items, were initially introduced to factor analysis. Ten were excluded from the final analysis primarily because the item loaded on a factor by itself or because the item had a low communality with the other items in the set.

[3]Composite scores were constructed by multiplying an individual's raw score for each item selected for inclusion in the scale by its factor loading, and then summing the resulting products. When an individual failed to respond to one or more items being included in the scale, the average score of his responses to other items of the scale was substituted in place of the missing response(s). In cases where half or more of the items had missing data, the individual's composite score was designated as missing.

[4]Thirty-nine items, 20 attitudinal and 19 propensity-related items were initially introduced to factor analysis.

[5]Items were also factor analyzed which intended to measure students' propensity to use change tactics that reflected appropriate use of power, another outcome of interest. Examples of these items are. Do students think it is important to have both sides feel as if they have "won" when low-level personnel are attempting to sell an idea to a superior? Should one immediately challenge a supervisor when resistance is encountered? When is it appropriate to use collaborative type tactics and when can one use conflict tactics? Should one's response to resistance be based on acquisition of power or "principle"? How important is it for low-level personnel to empathize with supervisors in negotiations? Unfortunately, construct validity could not be established for a measure of this program outcome, use of power; therefore it was not included in the analysis.

[6]Learning and teaching others about change agentry and misconceptions of power scales were skewed enough to warrant checks for violation of the normality assumption in subsequent analyses. This was accomplished by making additional computer runs after squaring each of the skewed distributions.

[7]In this and subsequent analyses, individual characteristics of students and test situational variables were checked for spurious effects. In addition, effects from other outcomes were considered as sources of spuriousness. Three steps make up the process by which spurious effects were uncovered. First, control variables were screened as to whether they were logically related to each individual outcome. For example, student grade point ratio is logically related to students' test scores, whereas the relationship between students' test scores and their propensity to become involved in grassroot change agentry prior to participating in the study was viewed as meaningless. Second, control variables which passed step 1 were correlated with both outcomes and independent variables under study. Third, correlations of .20 and above were entered simultaneously as covariants into the analysis of covariance and multiple classification analysis. Adjusted mean deviations displayed in each final table reflect only those covariants which affected the original relationships under study.

[8]Two covariants which were included in the analyses as control variables were academic status and self actualization. Academic status was a two category variable, undergraduate status or graduate status. Self actualization consisted of one item which measured students' need system regarding future employment. Students were asked to rank a set of five statements which reflects Abraham Maslow's hierarchy of needs of individuals. A single item was used in place of a scale consisting of four items which had been validated using 202 University of Maryland students in 1974. The single item was a more desirable covariant than the scale because the former measure which correlated highly with the scale satisfied the analyses of covariance assumption of linearity, whereas the self actualization scale did not. See Hall and Williams (1967) for a description of the Work Motivation Inventory from which these measures of self-actualization were developed.

[9]Six students who completed the questionnaire phase of the study did not participate in the interview phase. Consequently, analyses in which all study participants were combined into one group involved only 78 students.

[10]Research course intensity consists of a summed score of three items that formed a Guttman scale with a coefficient of reproducibility and scaleability of .96 and .89 respectively. This scale ranged from 0 to 3 with 0 meaning students reported that research courses were not usually time consuming, difficult, or frustrating. A score of 1 indicated those students who reported that research courses were usually or definitely time consuming but not difficult or frustrating. A score of 2 indicated that students saw these types of courses as both time consuming and difficult. Those students with a score of 3 felt that this course work was time consuming, difficult, and frustrating.

[11]Student level of research knowledge, one of the study's outcomes, and grade point average, were used as control variables in this analysis. The measure of undergraduate students' grade point average (GPA) consisted of a composite score consisting of four GPA indicators, (1) overall GPA for 5 semesters, (2) last year's GPA, (3) GPA over criminology courses, and (4) GPA over law enforcement courses. A factor analysis revealed that these indicators were highly correlated. For an indicator of graduate students' grade point average, we used their undergraduate GPA which included grades on all undergraduate course work.

[12]Interestingly, a rival hypothesis regarding differential effects that student career aspiration may have on propensity to use scientific methods was also refuted. We found that students who reported they wanted eventually to assume a research or planning role had significantly higher propensity to use R and D principles than those students who preferred a career role working with clients; however, there was a higher proportion of CAT students aspiring to work in research and planning positions and fewer CAT students who reported wanting to work in people-related jobs than among the comparative groups. Therefore, career aspirations also failed to explain why levels of

propensity to use research and development principles among the CAT group was no different than among comparative groups.

[13]Before conducting the clustering analysis, we recorded each of the outcome measures into three categories of scores; high, moderate, and low scores on each of the scales. The high category consisted of students' scores that were greater than ½ standard deviation away from the mean. The moderate category was students whose scores were within plus or minus ½ standard deviation away from the mean and the low category was made up of those students whose scores were greater than –½ standard deviation from the mean.

[14]The measure for classroom learning environment was a composite score which consisted of indicators for each of the five teaching modalities (TM) being experimentally manipulated in the CAT program. Since each teaching modality had multiple indicators, selection of one for each modality to be included in the composite score was based on correlations between these indicators and appropriate outcomes. Those selected to be included in the classroom environment scale are as follows:

TM 1 — Number of times students were involved in decision-making by professor most remembered for this teaching modality.

TM 2 — Average number of ways professors introduced unexpected changes.

TM 3 — Number of ways students were encouraged to participate in the learning process by professor most remembered for this modality.

TM 4 — Extent to which students were treated as colleagues by professor most remembered for this modality.

TM 5 — Number of professors who caused frustration in the subject areas under study.

By using Guttman scalogram analysis we selected dividing points for dummy coding each of the above teaching modality indicators which optimized the validity of the scale (coefficient of reproducibility .87, and coefficient of scaleability .50). The five dummy variables formed a cumulative scale with the following categories:

0 — No exposure

1 — Frequently treated as a colleague

2 — Frequently involved in decision-making

3 — Frustrated by 3 or more professors

4 — Frequent unexpected changes and encouragement to participate

Part-time field exposure to implementing change was created by summing two questions which pertain to direct and indirect exposure respectively. The range of variables was from 0, indicating neither direct nor indirect exposure, to 2, indicating both direct and indirect exposure.

[15]See note 14 for a description of how measures for classroom learning environment and part-time field exposure were constructed.

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