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THE STUDY OF A COORDINATED EFFORT TO ALLEVIATE BEHAVIOR

PROBLEMS OF A SELECTED GROUP OF STUDENTS

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THE STUDY OF A COORDINATED EFFORT TO ALLEVIATE BEHAVIOR  
PROBLEMS OF A SELECTED GROUP OF STUDENTS

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TO

My wife, Ruth Ann, and my children,  
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CHAPTER I

THE STUDY

Background of the Study

During the 1965-66 school year an innovative project titled A Cooperative Program for the Alleviation of Juvenile Behavior Problems was instigated by a multiagency committee (Vocational Rehabilitation Administration, RD 1855-G; A Guide for Project Personnel, RD 1855-G, 1966; Progress Report, RD 1855-G, 1966; A Report to the Joint Commission on Correctional Manpower and Training, Inc., RD 1855-G, 1967). This project provided intensive, carefully planned and coordinated counseling services for 159 pupils in grades 7 through 12 in Carver and Roosevelt Junior High Schools and Central High School, Tulsa, Oklahoma. The cooperating agencies were the public schools, Juvenile Court, Vocational Rehabilitation Department and Department of Public Welfare.

Mr. Voyle Scurlock, former Director of the Vocational Rehabilitation Division of the Oklahoma State Department of Education, initiated the appointment of the multiagency committee on behavior problems and helped clarify the task of the committee. The committee

members were: Dr. Don Keith and James West, Vocational Rehabilitation Division; Dr. Ted Baumberger and Jerry Jolly, Department of Public Welfare; Judge Dorothy Young and Judge Homer Smith, Tulsa and Oklahoma County Juvenile Courts, respectively; Dr. Larry Hayes and James Casey, Oklahoma City Public Schools; and Dr. Roger Duncan and Dr. Byron Shepherd, Tulsa Public Schools. Glen Wallace, State Department of Education, was chairman of this committee.

This committee developed the proposal for the multiagency project identified above. The proposal was funded by the Vocational Rehabilitation Administration in Washington, D. C., as Research and Demonstration Grant numbered 1855-G. The original committee became the Administrative Committee for this project, and the chairman of the committee became the project director.

The project proposed to strengthen supportive, psychological, sociological and educational services to youth through the coordinated efforts of agencies providing such services. The program was characterized by interagency committees using the team approach in staffing individual cases, by provisions for supervised study for the experimental group, and by critical evaluation of the role of agency counselors and by innovations in the school curriculum. The analysis of the outcome of this project is the concern of this study. The experimental program is explained in Chapter III.

### Need for Research

The recent findings of the President's Commission on Law Enforcement and Administration of Justice (1967) pointed up the

incidence and seriousness of juvenile behavior problems and recommended interagency programs for the alleviation of these problems. The Commission presented descriptive data revealing the significant tendency for more young people to become involved in more delinquent acts and for their offenses to be more serious.

The President's Commission (1967) reported that the problem of juvenile crime has now reached significant proportions and by the next decade it will become ominous in size. Approximately 444,000 children, ages ten to seventeen, were referred to the courts in 1960, and 601,000 of the same age group were referred to the courts in 1965. This trend of increased crime of the ten to seventeen age group is extremely accelerated in the highly urbanized communities. Nicholas deB Katzenbach, chairman of the President's Commission, gave testimony before a legislative subcommittee stating:

While arrests of adults declined one per cent in 1966, arrests of juveniles increased nine per cent. Youth between 11 and 17 comprising 13 per cent of the population, were convicted for 50 per cent of all burglaries, larcenies, and car thefts. Half of all crime against property was committed by minors. Of all ages, from cradle to grave our 15 year olds are arrested most frequently, and the rate drops at every older year (House Bill 12120, p. 2).

The President's Commission indicated that crime prevention should be energized on the community level. Communities should create structures for utilization and coordination of programs with the common goal of changing behavior of individuals toward more adequate citizenship.

Our national effort to alleviate crime has been characterized by appropriating funds and developing programs to rehabilitate adults. Large sums of money have been spent on deviant behavior of adults whose characteristics are relatively stable and whose behavior

is very difficult to change (Bloom, 1965). Large sums also have been spent for institutionalization requiring social adjustment much simpler than the very complex social adjustment required of the individual upon reintegration into the community (McCormick, Norman, & Weber, in press). Data presented in Table 1 shows what the emphases have been in the national effort to alleviate crime. For example, sixty-seven per cent of all persons with criminal records were in local communities while eighty per cent of the money and eighty-seven per cent of the professional personnel were assigned to correctional institutions.

TABLE 1  
FUNDS AND PERSONNEL ASSIGNED  
TO CRIMINAL CORRECTIONS, 1965

	In Institutions	In Communities
Where are the offenders?	33%	67%
Where is the money spent?	80%	20%
Where are the professional workers in correctional rehabilitation of the offenders?	87%	13%

Note. - Information from the President's Commission on Law Enforcement and Administration of Justice, (1967, Chapter II).

The Commission further recommended the streamlining of some programs and reported the waste of professional services, funds and human resources through the overlapping of functions, regimentation and uncoordinated efforts of governmental agencies at the federal, state,

and local levels. No one agency of government has the budget nor the legal authority to curb the ominous dimensions of crimes committed by young people.

Since 1946 the last twelve U. S. Supreme Court decisions on crime were decisions which favored the accused and tended to restrict law enforcement (President's Commission, 1967). More specifically, on May 15, 1967, the "Gault Case" (Gault v. United States, 28th U.S.C., 161, 1967) held that nearly all the constitutional rights of an adult must be provided to children at trial in a juvenile court when such children are in danger of being adjudicated delinquent or of being incarcerated. Such safeguards must include timely notice of the charges against them, the right to confront and cross-examine witnesses and complaints, and an adequate warning of the privilege and self-incrimination and the right to remain silent. This decision imposed an additional burden upon our Nation's juvenile justice system. The decision did leave alternatives for the pre-judicial and post-disposition treatment of youth exhibiting behavior problems. Wise decisions related to these alternatives should be based on adequate research related to innovative community programs for pre-delinquents, for social and judicial intake of individuals and for probation and aftercare services.

The objective of "The Juvenile Delinquency Act of 1967" (Senate Bill 1248, House Bill 12111) provides funds for action research for local communities enabling agencies of government to better support the juvenile justice system. This pending legislation was an outgrowth of the recognition of the need for such research.

The documented magnitude of juvenile delinquency and the major recommendations for its alleviation clearly identify the need for the development and evaluation of innovative, interagency, cooperative programs. Since the RD Grant 1855-G project was such a cooperative program for the alleviating of juvenile behavior problems, the effectiveness of this program should be evaluated.

### The Problem

The problem was to determine the extent to which the intensively planned and coordinated guidance and counseling services rendered by the public schools, Department of Public Welfare, Vocational Rehabilitation and the Juvenile Court would decrease the degree of frequency of behavior incidents among students characterized as having "behavior problems."

More specifically, this study was designed to answer the following questions:

1. Will school attendance be improved as a result of planned and coordinated guidance and counseling services?
2. Will academic achievement be improved as a result of planned and coordinated guidance and counseling services?
3. Will there be a decrease in the number of school offenses recorded in pupils' cumulative records as a result of planned and coordinated guidance and counseling services?
4. Will there be a decrease in the number of juvenile court referrals as a result of planned and coordinated guidance and counseling services?

To evaluate the effectiveness of the experimental program, the following null hypotheses were formulated:

1. There is no significant difference between the experimental and the control groups in half days present in school. The school attendance, academic achievement, school offenses, and court referrals during the preceding school year will be held constant through the statistical procedure known as analysis of covariance, while the significance of the observed difference is tested for the half days present for the school year 1965-66.

2. There is no significant difference present between the experimental and the control groups in the mean grade point average. The school attendance, academic achievement, school offenses, and court referrals for the preceding school year will be held constant through analysis of covariance, while the significance of the observed difference is tested for the grade point average for the school year 1965-66.

3. There is no significant difference between the experimental and control groups in school offenses. The school attendance, academic achievement, school offenses, and court referrals for the preceding school year will be held constant through analysis of covariance, while the significance of observed differences is tested for the school offenses of the year 1965-66.

4. There is no significant difference between the experimental and control groups in juvenile court referrals. The school attendance, academic achievement, school offenses, and court referrals for the preceding school year will be held constant through analysis of covariance,



while the significance of observed differences is tested for the juvenile court offenses for the school year 1965-66.

#### Definition of Terms

Behavior problems are those acts which violate the norms--legal, social and psychological--with the focus on the individual's intent rather than on the consequences of his behavior. Such deviant behavior is inappropriate to the youth's level of development, eliminating the causal factors of extremely low intelligence, intercranial pathology, or severe mental or metabolic dysfunction. This behavior is alien to the culture, school, and community of Tulsa, Oklahoma. The juvenile court, welfare agency, and vocational rehabilitation used these specific criteria: (1) manifestation of delinquent or pre-delinquent behavior as evidenced by prior court referrals, (2) neglect by parents or guardians as revealed through the Department of Public Welfare records, and (3) incarceration in either a State training school for delinquent youngsters or an orphan home for neglected or abandoned children. School officials used the following criteria: (1) display of either extreme behavior or emotional problems within the school environment as evidenced by past counseling and discipline school records, (2) establishment of a poor or irregular school attendance pattern, and (3) achievement at a substandard educational level in relation to intellectual level.

Interagency coordination is an involved form of collaboration and cooperation between departments and agencies. Obviously, in this study something more is intended than a mere exchange of information.

The objective is real cooperation at all levels, not simply the setting up of a directive force at the top but rather the provision of reciprocity of information.

The areas of activity of the four agencies involved in this study are fixed by law. The schools, juvenile court, public welfare, and vocational rehabilitation represent specific missions within legislative authorization. All these agencies are basically dedicated to the furtherance of their particular mission, but the growing complexity and breadth in the field of juvenile behavior problems has led to more and more overlapping of activities. This study is concerned with interagency coordination in one well-integrated program of all four agencies for the alleviation of behavior problems. Interagency coordination in this study also includes the provision of counseling services and the dissemination of information among the four agencies as they work together on an intellectual and professional level for the social and economic benefit of students with behavior problems, and for the economic and social benefit to the citizens. This interagency effort will be attempting to put the right service, in the right place, at the right time, and in the right amount for the individual with the behavior problem.

Juvenile is a male under sixteen years of age or a female under eighteen years of age.

Juvenile court is a judicial institution established for the sole purpose of hearing cases concerning juveniles.

Children's court is the same as juvenile court.

Adjudicated delinquent or juvenile court referral is a juvenile who has been officially declared a delinquent and made a ward of the court by being placed on probation, placed in a foster home, or sentenced to a training school.

School offense is a referral of a secondary school student of the Tulsa Public Schools to the Dean of Men or Dean of Women for discipline. The Dean's office keeps a record of each student's visit for discipline and at the end of the school year this is recorded for permanent record.

Supervised study is the plan for a period of the school day in which each member of the experimental group is provided intensive, planned and coordinated guidance and counseling services by the agency counselors and teachers. The curriculum is not rigidly structured but rather informal and geared to group counseling, individualized instruction and behavior improvement.

Staffing students is the group meeting of agency counselors, teachers, and other specialists to discuss problems of the students in the experimental group in a meeting, to make recommendations for the treatment of the students, and to follow up on these recommendations.

#### Limitations of the Study

1. This study is limited by the inability to perfectly match the experimental students and a control group of students on all significant variables. These groups are comparable by age, sex, race, I.Q. and behavior records.

2. The population sample comes from a low socio-economic area

with a high delinquency rate and is nearly two-thirds Negro.

3. The assignment procedures for the experimental group require permission from the parents for the child to enter the experimental group.

4. The students of the control and experimental groups who exhibited a similar degree of behavior problems are relatively mobile due to transferring out of school, dropping out of school and withdrawing to institutions (Blum, 1961). Data were difficult to obtain on this selected group.

### The Subjects

All students were identified who met the criteria of exhibiting "behavior problems" as defined previously and who were in grades 7 through 12 in Carver and Roosevelt Junior High Schools and Central High School of the Tulsa Public Schools. From this aggregation, two groups were formed. The students in each group were paired as closely as possible in relation to the following factors: race, sex, age, mental maturity, and degree of problem behavior.

The students selected to be subjects of the project were randomly assigned to either the control or the experimental group. Those designated as the experimental group were enrolled in "Supervised Study" and received intensive, planned and coordinated guidance and counseling from the Tulsa Public Schools, Juvenile Court, Vocational Rehabilitation and the Department of Welfare. Those assigned to the control group continued in the regular school curriculum and received no special

assistance other than that provided under the normal procedures of each of the four cooperating agencies.

Data were available for the whole school year for 159 of the 289 students originally identified as "behavior problems." Table 2 summarizes reasons why pupils were dropped from the study.

TABLE 2  
THE SUBJECTS

Sample	Experimental	Control	Total
Original number of subjects	148	141	289
Final number of subjects	75	84	159
Losses	73	57	130
Transfers out of school or class	14	16	30
Withdrawals to institution or agency	9	6	15
School dropouts	30	25	55
Incomplete research data	20	10	30

Distribution by grade level and sex of subjects for the school year 1965-66 is shown in Table 3. Distribution by grade level and race is shown in Table 4.

The experimental and control groups were similar in intelligence as measured by the Otis Quick Scoring Mental Ability Test, Form A, during the 1965-1966 school year. The mean intelligence quotient was 89.345 for the control group and 89.737 for the experimental group.

TABLE 3  
SUBJECTS  
AS DISTRIBUTED BY GRADE AND SEX

Grade Level	Experimental			Control		
	Boys	Girls	Total	Boys	Girls	Total
7	8	10	18	10	9	19
8	8	12	20	16	11	27
9	10	11	21	14	9	23
10	12	0	12	4	2	6
11	1	2	3	2	2	4
12	0	1	1	3	2	5
Totals	39	36	75	49	35	84

#### The Procedures

The procedure of this study was structured to determine the relative effectiveness of the conventional guidance and counseling services of the public schools, juvenile court, Vocational Rehabilitation and Welfare Departments and the interagency coordinated guidance and counseling services. The two groups of subjects exhibited a similar degree of behavior problems. The experimental group received the coordinated attention of the counselors from the Tulsa Public Schools, Juvenile Court, Vocational Rehabilitation Department and the Department of Public Welfare and were enrolled in supervised study. The control group continued in the regular school curriculum and received no special

TABLE 4

SUBJECTS  
AS DISTRIBUTED BY GRADE AND RACE

Grade Level	Experimental				Control			
	White	Negro	Indian	Mexican	White	Negro	Indian	Mexican
7	5	13			9	10		
8	6	13		1	2	24	1	
9	5	15	1		5	18		
10	10	2			3	2	1	
11	3				4			
12	1				5			
Totals	30	43	1	1	28	54	2	0

assistance other than that provided under the normal procedure of each of the four cooperating agencies.

Half days present in school, grade point average, and school offenses were the data gathered from the cumulative records of the Tulsa Public Schools. Court referrals were the data gathered from the Tulsa Juvenile Court. Data related to attendance, academic success, and school and legal offenses were used to evaluate the effectiveness of this interagency coordination approach for alleviating behavior problems. Covariance was the statistical procedure used to test the significance of the differences in behavior of the control and experimental groups.

## CHAPTER II

### OPERATIONAL PATTERNS FOR ALLEVIATING BEHAVIOR PROBLEMS

This chapter reviews the literature related to operational patterns of programs in education, corrections and welfare. Emphasis is upon the multiagency designs with different philosophies, assumptions and organizational constructs and upon programs attempting to alleviate severe behavior problems.

This review of the literature is limited by the availability of specific data about such programs. Kvaraceus (1959) emphasized the problems and outcomes of reviewing community-wide programs. He reviewed the literature for six years for the National Education Association and made this statement concerning community operational programs in education:

In spite of the mythology and folklore that persists in approaches to delinquency in most communities, there are now discernible a number of promising practices aimed to prevent and control norm-violating behavior-practices which appear to be relevant to the factors which germinate and cause such behavior (Kvaraceus, 1959, p. 29).

#### Operational Patterns in Education

The community relies heavily upon the school, and it expects the educational system to develop children toward its cultural objectives by a special environment that has been systematized, edited, and simplified for a special purpose. The school has the major responsibility



for transforming the human nature of the child in such a way that he will become a "bearer of the culture" (Clarke, 1948). Ragan states: ". . . . the teacher is a builder of human lives and a trustee of the cultural heritage held by each generation for the enrichment of the next" (Ragan, 1966, p. 40).

Certainly the school should occupy a key position in the operational patterns for alleviation of behavior problems. The assumption that the school is in a strategic position second only to the family in the socialization process of young people is well presented by Harrison Salisbury (1958):

There is no question that next to a good family, a good school best copes with the inadequate, bewildered adolescent. There is no one-shot, surecure for delinquency. But if a community wants the quickest, cheapest, most effective results, the place to spend money is in the school system. We sometimes forget that it is the business of the school people to deal with children. They are experts at it. Here is the place, if there is one, to come to grips with the shook-up generation (Salisbury, 1958, p. 225).

Kvaraceus and Ulrich (1959) emphasize the school as the focal point for community patterns in coping with behavior problems. They set forth this basic principle in their research for the National Education Association:

The school recognizes that delinquency prevention and control is a community problem and requires action on the part of all citizens. The school studies, evaluates, understands and makes use of the peer, ethnic, racial, and religious systems at work in the community. Utilizing and working with the resources of all available agencies and institutions, the school has a leadership role in the formulation and continuation of a community-wide effort for the prevention and control of norm-violating behavior (Kvaraceus & Ulrich, 1959, p. 286).

Stulken (1959) believes that the school should not be restricted to imparting knowledge and intellectual reasoning skills. He believes that schools were established to help youth to realize their potentialities and develop into useful citizens and that education is a process of changing the behavior of people and causing them to think, feel, and act differently.

Kvaraceus (1966) challenges the schools to become involved in alleviating deviant behavior with this statement:

All the future trouble makers and delinquents are now sitting in the nation's classrooms. Every pre-delinquent has continued in close contact with one or more professionally trained teachers charged with the responsibility for developing well-integrated, useful and socially effective citizens (Kvaraceus, 1966, p. 36).

The traditional operational pattern of schools has occasionally been redesigned slightly to accommodate the child who has behavior problems. Typical of this is the Montefiore School in Chicago and the "600" schools in New York City. The "600" schools are administered by the Division of Child Welfare of the New York City School System and include more than twenty schools falling into the categories of day schools, remand centers, institutions, and hospital schools. They serve children who have been unable to get along with adults or peers and could not be contained in regular classrooms because of their extreme aggressiveness (New York Juvenile Delinquency Evaluation Project, Report VI, 1957; New York Juvenile Delinquency Evaluation Project, Report XI, 1958; New York City Board of Education, Report VII, 1957).

Major objectives of the "600" schools were: expanding existing services for emotionally disturbed and socially maladjusted children in

regular schools, strengthening the total instructional program, strengthening professional competence of school personnel, accelerating day school programs, and establishing an advisor coordinating committee (Educational Research Information Center, No. ED002079, 1966).

More frequently, however, schools have attempted to graft on a multitude of special programs to deal with the problems of delinquency. One of the most complex and complicated examples of a multitude of specialized programs can be found in the New York school system under the Division of Child Welfare of the Board of Education. This division, consisting of eleven different bureaus, offers samples of almost every kind of special school program that exists in this country. It has an elaborate special education program, a program of educational and vocational guidance, and probably one of the largest single systems of child guidance services in any part of the world. Each of these semi-autonomous units approaches the changing of behavior in its own way and with its own specialists (Annual Report "600" schools, Report No. 1, 1959; New York City Youth Board Report on Gangs, 1960).

Still another educational-operational pattern in New York City is the All-Day Neighborhood School (New York Juvenile Delinquency Evaluation Project, Report No. XIII, 1959). There are nine regular elementary schools which are included in the "special service schools," a designation given by the Board of Education to about 25 per cent of the New York City Elementary and Junior High Schools. The "special service schools" rank lowest according to such factors as achievement and I.Q., and highest according to the percentage of children getting

free lunch, of pupil mobility, and of children having language handicaps. Most of these schools have predominantly minority group children and classes of 30 per cent or more non-English speaking students (New York City Board of Education Annual Report, 1959). The All-Day Neighborhood Schools have three goals: to provide cultural enrichment, to help the children with problems, and to work with parents, citizens and the neighborhood.

Another example of a unique school program is the Los Angeles County Reception Center Training Program, in which the teaching of vocational skills and pre-vocational skills and habits is carried on within the academic classroom. It is highly programmed with careful attention given to the behavior demanded in work situations. A sequence of learning episodes for acquisition of new habits, understandings, purposes, goals, ideas, feelings and attitudes are carefully prepared for each child. Each of these episodes is presented to the students as a job rather than as an assignment. The level and number of jobs required are determined on the basis of achievement tests, mental age, and mental ability expectancy levels. The teacher acts as foreman and provides conditions and opportunities for learning skills and vocational or on-the-job skills and behaviors (Los Angeles County Special Schools, Vocational Skills, Reception Center, 1959).

There are numerous other patterns and programs in the schools in the United States. The traditional ones include pupil-personnel services, school-psychology programs, school social work programs, and clinical programs (Kvaraceus, 1954; Kvaraceus & Ulrich, 1959;

Kvaraceus, 1960; and Kvaraceus, 1966).

The Cambridge-Somerville Youth Study (Reilly & Young, 1946; Murphy, Shirley, & Witmer, 1946; Powers & Witmer, 1949; McCord & McCord, 1956; Powers, 1959) was started in 1937 and continued until December 31, 1945. Two matched groups of 325 boys each were selected by staff psychologists.

The treatment program of interagency coordination planned for the experimental group placed a major emphasis on clinical procedures and cooperation with the school officials. The experimental data showed that the special program was no more effective than the usual method used by the community in preventing boys from committing delinquent acts. There were only two indications that the interagency coordinated effort might have favorable effect:

1. A smaller portion of the experimental boys than control boys had served time in jail.
2. Those boys who received the most intensive psychologically sophisticated treatment had a better general record than boys who received only counseling.

Another operational program related to this study is the Flint, Michigan Youth Study (Winter & Halsted, 1965) conducted by a team of doctoral students of sociology, social psychology and education from the University of Michigan. This team used projective tests, sociometric procedures, group observation, neighborhood observation, attitude and value questionnaires, school and agency records, and interview schedules to evaluate programs. The data indicated far more research

was needed. The Flint Youth Study blended community education, community action, community training and community research into four phases of study: diagnostic research, design of new operational patterns, the feasibility of new operational patterns, and sharing the project with other communities. Most of the data available in this study was descriptive research.

Unlike other countries, the United States has developed only one operational pattern for education, the school (Wattenberg, 1960). Conant (1961) questions the appropriateness of this pattern in the great American social swamps known as the slums. Perhaps we need new patterns for this group (Brunner, 1960). A possibility for education of individuals with behavior problems might be the revival of the apprenticeship system in this country. It is still active in European countries (Kohler, 1960). An apprentice-master relationship might accomplish as much for some of these children as our present school pattern (Asbell, 1966). There is evidence that traditional school programs can cause the individual to feel that his self-esteem is assaulted. Self-defense becomes hostility and hate and causes the youngster to bring displeasure to others or to commit antisocial acts (Harris, 1963; Jersild, 1963).

The Kibbutzim Program in Israel might also offer suggestions for new kinds of teaching-learning programs concerned with the combined skills learned in family and school situations. Such programs might be quite appropriate in disorganized neighborhoods made up of disintegrated family units (Stendler, 1964).

France and Canada have dealt with problems of the delinquent operationally through multiple use of a special professional group known as "educateurs." France has a variety of special patterns and programs staffed with educateurs who devote their efforts to working with delinquents. Of particular interest are the special homes which provide residential treatment-type programs for groups of 30 to 40 children. The educateur profession is newer in Canada, having been developed within the last ten to twelve years, but it is an extremely interesting training program and a strong, cohesive professional organization. A special institution at Boscaville, near Montreal, works with delinquents using the orientation and techniques of this group (Arcadia, 1954; Parrot, 1959).

#### Operational Patterns of Corrections

Legal correctional authorities are seeking operational patterns to replace the traditional training schools (Galvin, 1964). The new programs are geared to the need for improved reintegration of the individual into the community. The training school has maintained high recidivism of the delinquent in runaways and transfers to penal institutions. Leaders in the field of corrections are looking for operational patterns and programs as alternatives to training schools. There is an indicated need for community-based services with new structures and new ideas to care for and treat the delinquent. Studies of the Highfield Story of New Jersey (McCorkle, Elias & Bixby, 1958) and of the Wiltwyck School near Poughkeepsie, New York (McCord & McCord, 1953; 1956) report the results of non-traditional institutional operational patterns.

Superintendents present several reasons which they believe account for the failure of training schools to do as good a job as they might. The most frequently mentioned are over-crowding, too short lengths of stay, lack of aftercare services, and unselected intake (MacCormick, et al., in press). Research has shown that compliance to norms of institutional life, and even noncompliance to these norms, is not related to ability to adjust in the community in a socially acceptable manner (Jones, 1964; Jessness, 1965; Bolen, Crowe, & Wagner, 1966).

Weber (1967) reports that training school superintendents fear "institutionalization" may interfere with a youth's ability to adjust to the diverse and conflicting demands of the community. "Institutionalization", as a syndrome describing the ability to obtain satisfaction from institutional life not available to them in the community, has been the subject of many conferences and workshops. This concept raises questions as to the legitimacy of the training school as a model for achieving the behavioral change necessary for community adjustment.

A change of focus from the institution to reintegration in the community is important. If a youth is labeled a delinquent, he may behave in conformity with how a delinquent is supposed to act (Schechter, 1965). Delinquency, as a reintegration concept, is a label, not a disease. Delinquents are "who the courts say they are" and the process of dysfunction includes both the definer and the defined. Definers of delinquency are characteristically teachers, social workers, parents,



policemen, intake court workers, and other members of socializing systems. There is a stigma attached to adjudicated delinquents; and the effect of this labeling process has an effect on the access of the offender to school, job, union, business world, military, political organization, neighborhood clubs, and church groups.

The community-based program is characterized by a larger exposure of the individual to the total socializing system than that represented by one assigned agent. Thus, the individual may be related to a teacher, a vocational rehabilitation counselor, a field youth counselor, a group of peers sharing the same status in the system, and parents striving for behavior change (Kvaraceus, 1954; Miller, 1962; Kahn, 1963).

Furthermore, community-based programs may mean fewer youths institutionalized. Knowledge of transformation processes leading to the adjustment of delinquents in the law-abiding community has not been systematically pursued except in rare instances. Dr Empey (1966) stated that a "strategy of search" in contrast to a "strategy of action" in the development of new programs was necessary if society is to learn how to integrate law violators and the community. Dr. Empey (1966) further states:

A strategy of action has not only failed to approach correctional problems systematically but to provide means either for avoiding repetitive errors or for pinpointing reasons for success should success occur (Empey, 1966, p. 5).

Frequently there is a much lower rate of recidivism reported by community-based programs, and the costs are significantly less. Here

is a great opportunity for interagency coordination in operational patterns. The benefits and problems of the community-based operational pattern have been pointed out (Gold & Winter, 1961; Hunt, 1962; Bresline & Crosswhite, 1963; Carpenter, 1963; Hair, 1963; Herstein, 1964; Kennedy, 1964). The benefits are:

1. There is usually more intensive and frequent counseling by the socializing agency counselor or counselors.
2. There is active involvement in relating the youth to the family, community agencies, including schools, vocational training or jobs.
3. Programs are structured more elaborately than the traditional agency-offender patterns.
4. There is an easier approach to the goal of reintegration and raised cultural aspirations.
5. There is likely to be less shifting of responsibility for a behavioral problem to someone outside the normal context, which often magnifies the initial problem.
6. Giving assistance to family problems takes precedence over parents' transferring their problem to someone else such as the school, clinic, court or training school.
7. There is a more efficient referral system.
8. Community-based programs may include "halfway houses" as well as other basic alternatives to the institution.
9. Continued residence of youths in their homes, foster homes or local cottages is possible through a program of local administration.

Problems encountered in community-based programs include the following:

1. Some delinquents need institutional care.
2. Too often the decision of the community-based program is a decision of the juvenile judge who does not coordinate with the local socializing agencies involved.
3. Too often these community-based programs include only those juveniles who are serious violators of the law when other youth could profit from this program.
4. Programs are more intensive and demanding on the juvenile's time.
5. Division of responsibility between local jurisdiction and the State becomes a problem.
6. The community-based program must be part of somebody's budget.
7. The community-based program demands vision, energy and professionalism on the part of the staff. No longer is the correctional system a matter of clerical work; it has become a matter of treatment of human behavior.
8. Too many community-based treatment programs reflect the personality of the innovator and do not demonstrate on-going systematized effectiveness.
9. Too often success is dependent upon the administrator alone.
10. There are some who feel individuals should sometimes be constrained overnight or on weekends.
11. The community power structure may not accept the responsibility of a community-based program.

The State of Wisconsin operates thirty-three group homes contracted by the State with foster parents subsidized for four to eight individuals (McCormick, et al, in press). The relationship in the home is similar to a family setting, but the parent-youth relationships are not as emotionally demanding as a single placement foster home. Youth may later be transferred to a State institution or returned to their homes.

The State of Michigan recently approved the development of agency-operated group homes throughout the State (Perrow, 1963; Gula, 1964). These halfway houses are an alternative to institutionalization (Rabinow, 1964). The philosophy is geared to the continuity of treatment from institution to the community until self-sufficiency can be attained (Bresline, et al., 1963; Carpenter, 1963). Other agency-operated group homes are MacLaren School for Boys, Oregon; Girls' Welfare Home, New Mexico; and Boys' Industrial School, Kansas; and Silver Lake Group Home of the Boys' Republic, Los Angeles (Empey & Rabow, 1961).

Day-Care Programs have no residence involved; the youths live in their own homes. Some examples of day-care programs are: Essexfields, New Jersey; San Mateo County Program, Belmont, California; Contra Costa County Girls Unit for Intensive Daytime Education, Martinez, California; and Parkland Project of Community Rehabilitation Group Center, Louisville, Kentucky (Weeks, 1959; Stark, 1963; Warren & Kleine, 1965).

Many innovations in operational patterns of correctional systems have been developed in various states. The following programs are innovative: in New Jersey the Highfield, Turrel, Ocean and Warren

Projects (MacCormick, et al., in press); in New York the START Centers of the Division of Youth, South Kortright and Brookhaven, Department of Social Welfare (MacCormick, et al., in press); in Kentucky the Kentucky State Reception Center Project (Pilnick, Elias & Clapp, 1966) and Group Treatment Camps of the Department of Child Welfare (Wall, 1963); in California the Silver Lake Group Center (Empey, et al., 1961; Seckal, 1965) and other programs of the Department of the California Youth Authority (Cressy, 1957; Adams, 1961; Adams & Grant, 1961; Grant, 1961; Beverly & Guttman, 1962; Warren, 1964; Butler & Adams, 1966; California Youth Authority, 1966, Reports No. 1 through 7); in Michigan the Camp La Victoire and Nokomis of the Department of Social Welfare (MacCormick, et al., in press); in Washington the Cedar Creek and Capitol Hill Forestry Camps of the Bureau of Juvenile Rehabilitation (MacCormick, et al., in press); and in Ohio the TICO Projects of the Ohio Youth Commission and in the District of Columbia the Cedar Knoll School of the United States Department of Labor (Presckel, 1964).

Theoretical considerations, bordering on simple common sense, support the strategic location of correctional programs in the community. There is general agreement that the closer the intervention activities are to the normal community situation, the greater success they have in reestablishing law-abiding adjudged delinquents (Yablonsky, 1965).

#### Operational Patterns of the Welfare Agencies

The Social Welfare System has been more prolific than the other systems in developing new programs. In addition to delinquency-focused programs within the public welfare departments, there are family or child-community centers, area councils, recreation centers and other group-work

agencies, homes for unwed mothers, youth employment programs and summer camps. Examples of Social Welfare System responses to current behavioral concerns of the community can be seen in the programs of gang work, street-corner group worker, or street-club work for gang control. An example of such a program is the Chicago Area Project, begun over twenty-five years ago under the influence of Clifford Shaw (Kobrin, 1959).

The Chicago Area Project has had three elements: recreation, community development and improvement, and direct work with gangs and individual boys. It is the third element which has recently become very popular in large urban areas. Some of the newer gang behavior programs which have been most frequently reported are the Roxbury or Boston Special Youth Program (Miller, 1959), the Hyde Park Project (Gandy, 1959), the Los Angeles Youth Project (Allston, 1951), and the gang control operation of the Commissioner's Youth Council in Washington, D. C. (Whyte, 1943). Gang theory has been elaborately developed in such works as Whyte (1943), Bloch & Niederhoffer (1958), Miller (1958), Salisbury (1958), and Cloward & Ohlin (1961).

Service to "multiproblem families" is another social welfare concern. The occurrence of multiproblem families has been dramatized by the studies of Buell, Beissler & Wedemeyer (1958). They report about six per cent of the families were suffering from a combination of serious problems and were using 46 per cent of the community-organized health services, 55 per cent of its adjustment services, and 68 per cent of its dependency services.

These findings have been supported in many other cities. In New York City, they have become a demographic fact upon which an

important segment of the Youth Board's pattern has been founded. In a Senate subcommittee investigation Ralph Wheland reported, "In New York, our research reveals, fewer than one per cent of the families make up the hard core responsible for some 75 per cent of the juvenile delinquency" (Wheland, 1958, p. 85). On this basis, the Youth Board has developed a program of aggressive casework to reach these families. In a quantitative analysis of a sample of 150 such families, the Youth Board has categorized them on the basis of failure of the functioning of the mother, the father, the siblings; failure in marital adjustment and economic deprivation. Of the 150 families, 87 per cent were failures in three or more areas, 35 per cent were failures in all five areas. Forty-five per cent of the fathers were separated from the families, and another 10 per cent were deceased. Over half of them were entirely financially dependent.

Another example of social welfare programs focusing upon the family as a unit are the camps for antisocial families which have been in operation in Holland since World War II (Eichorn, 1965). This program was recently recommended for inclusion in the programs of the Commissioner's Youth Council in Washington, D. C. The object is to retain family ties and develop adequate inter-personal relationships and a healthy family life.

Interagency coordination by area councils or community councils is one of the social welfare patterns (Beam, 1957; President's Commission on Law Enforcement and Administration of Justice, 1967). Although reduction in the rate of delinquency can be shown in area projects, it is difficult to clearly demonstrate the relationship between specific

programs in the projects and the changes in delinquency statistics (Sutherland, 1955; Kobrin, 1959).

At Vocational High School in New York City, social workers, teachers, psychologists and sociologists have collaborated in a major effort to prevent what seemed inevitable delinquency of its problem girls. This was a six-year experimental program of four hundred potentially deviant girls. Two hundred were selected at random for the control group and the others were referred to a Youth Consultant Service providing individual casework and group therapy. The authors of the research recommend this study as a directive to further research and to the study of new methods and wider-reaching programs in the collaboration of welfare counselors, school counselors, psychologists, therapists, sociologists and researchers in a school-agency-community program (Mayer, Borgatta & Jones, 1965).

### Summary

The review of literature related to operational patterns in education, correction, and welfare developed to alleviate behavior problems of juveniles established the inadequacy of current practices emphasizing institutionalization and correction rather than prevention and guidance in the home communities and clearly indicated that communities should develop programs coordinating the efforts of all agencies concerned with behavior problems of juveniles.

The Tulsa project titled A Cooperative Program for the Alleviation of Juvenile Behavior Problems (RD Grant 1855-G) was a multiagency, cooperative community program. This program incorporated major recommendations found in professional literature.



## CHAPTER III

### DESIGN AND METHODOLOGY

#### Organization of the Experimental Program

The purpose of the experimental program was to alleviate behavior problems of juveniles by providing intensive, planned and coordinated guidance and counseling services by the public schools, Department of Welfare, Vocational Rehabilitation and the Juvenile Court. This interagency coordinated effort was administered according to the model found in Table 5. The specific purposes of the experimental program were:

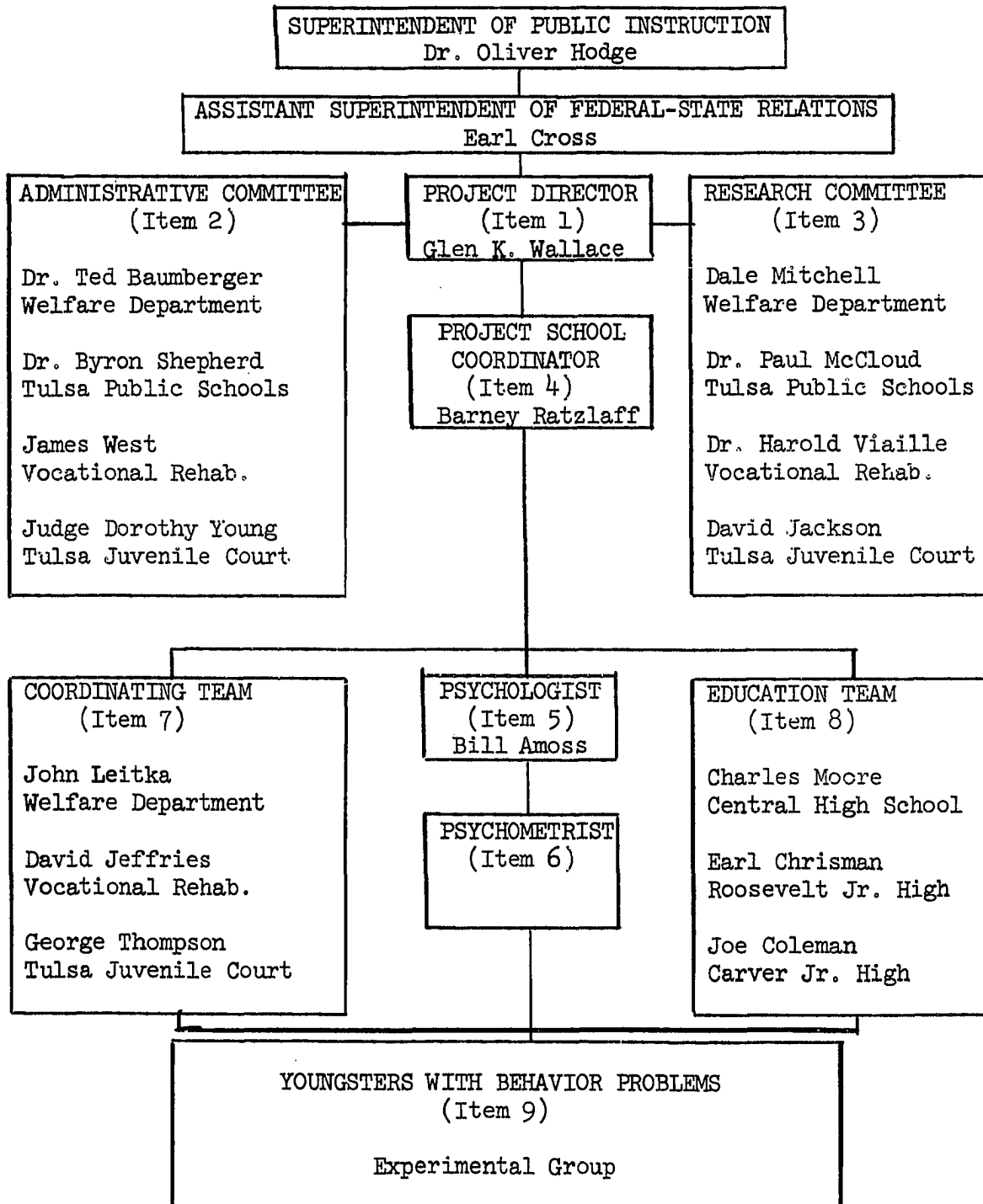
1. To coordinate services available from the four agencies in a flexible treatment program to meet the individual needs of students with behavior problems.
2. To establish a mutually acceptable relationship between the four agencies which would reenforce the services of each agency.
3. To stimulate the development of new programs by agencies, such as the political, therapeutic, law enforcement, social control, recreation, economic, religious, and educational groups.
4. To determine the possibility and the feasibility of alternate programs.

This experiment was administered by the project director employed by the State Department of Education. This project served

TABLE 5

THE OPERATIONAL PATTERN FOR THE ADMINISTRATION  
OF THE PROJECT FOR THE EXPERIMENTAL GROUP

STATE BOARD OF EDUCATION



individuals, ages 13 to 21, who had behavior problems and attended Carver and Roosevelt Junior High School and Central High School of Tulsa, Oklahoma. These schools serve an attendance area with a particularly high incidence of delinquency and behavior problems. Table 6 gives the schools attended by Tulsa Public School pupils identified as delinquents.

TABLE 6

TULSA PUBLIC SCHOOLS ATTENDED BY PUPILS  
IDENTIFIED AS DELINQUENTS IN 1963

Tulsa Public Schools	Per cent of Delinquent Pupil Population
Anderson Junior High School	4
Bell Junior High School	4
Carver Junior High School	6
Clinton Junior High School	5
Monroe Junior High School	5
Roosevelt Junior High School	6
Central High School	7
Nineteen other secondary schools	55
All elementary schools	8

Note. - Based on information reported by Keith (1964, p. 57).

Juveniles to be classified as having behavior problems for this experiment were chosen on the basis of criteria elucidated in Chapter I. This experiment provided two basic avenues of action for the prevention and treatment of behavior problems, the intensive coordination and integration of agencies' counseling services and an educational program designed to assist subjects to adjust more effectively to the demands and norms of society. The program utilized the "team" approach. A coordinating team of counselors from the four governmental agencies

involved provided the basic integration of the services of the cooperating agencies, and an educational team of carefully selected teachers provided the specialized curriculum for the individuals.

#### Personnel Responsibilities

The Project Director (Table 5, Item 1) was charged with the supervision and the maintenance of interagency coordination of the investigation. This included: the accounting and disbursement of the experimental research grant funds; the development of policies, practices and innovative procedures as approved by the administrative committee; the assembling, treating and reporting of the research data on this study; serving as liaison person for the project to other interested persons and agencies; performing other creative tasks normally required in any innovative design of social practice; and keeping ongoing feedback current as fuel upon which the investigation could better progress.

The administrative committee (Table 5, Item 2) was composed of administrative officials from the four agencies. This committee had regularly scheduled meetings to review the activities of the experiment, provide general direction to the project director, and interpret the activities of the project to their respective agencies' administrative personnel.

The research consultants (Table 5, Item 3) for this program were from the respective agencies. This committee insured that interpretations drawn from the results were correct and meaningfully reported.

The project school coordinator (Table 5, Item 4) had the responsibility for the day-to-day operation of the program. He coordinated

the services of the project counselors and teachers. Also, he was responsible for the educational guidance of the students in the program. He supervised the effort to integrate the students into the community's middle class values through involvement in the Boy Scouts of America, YMCA, YMCA, National Youth Corps, Ministerial Alliance, and other resources.

The psychologist (Table 5, Item 5) functioned as a staff member for the project. His major role was that of consultant to the members of the educational and coordinating teams. Thus, the teachers and counselors had available professional advice regarding the treatment, program planning, and services for the students in the program. He administered psychological tests to the experimental group as they were referred. He also was very effective in the "staffing" of the students.

The psychometrist (Table 5, Item 6) was directly responsible to the psychologist and provided diagnostic evaluations of the individuals referred to him.

The coordinating team members (Table 5, Item 7) were the Tulsa Juvenile Court Counselor, the Department of Public Welfare Field Youth Counselor, and the Vocational Rehabilitation Counselor. These counselors had three major areas of responsibility. They functioned as liaison persons between the agency from which they were assigned and other agencies in the program. They had sufficient experience with their particular agency before being assigned to the project to effectively interpret their agency's responsibilities, facilities, resources and limitations to other members of the project.

When an individual's case was referred to the project it was the responsibility of the coordinating team members to acquire all of

the pertinent information that was available and formulate a detailed case study. Based on this information, and any additionally acquired diagnostic information, the coordinating members staffed the cases and made recommendations for referrals, corrections, education and other treatment deemed necessary. This procedure attempted to identify the individual's needs and to meet these needs as thoroughly as possible through the coordination of the available facilities and counseling services.

Another responsibility of the coordinating team members was in the area of guidance and counseling. Many of the individuals had a fixed relationship with one or more of the project counselors. For example, all of the individuals included in the project who were under probation from the juvenile court had a legally defined relationship with the assigned probation counselor. Through the counseling procedures, it was necessary for the coordinating team members to confer with the educational team members in working through problem areas of students. All agency counselors worked out of the same guidance file and had access to guidance records.

The educational team (Table 5, Item 8) provided its own specialized education curriculum in addition to all of the services and facilities available through the regular treatment programs of the agencies involved. The educational team was composed of three supervised study teachers who worked with other school officials and teachers in devising a special curriculum for the experimental students.

Each of the participating agencies had a specific role. The public school system was responsible for the general operation and

administration of the total program. The numerous services provided by the public school system were made available as integrated parts of the program. The psychometrist, school counselor, and all members of the educational team were employed by and responsible to the Tulsa Board of Education. Building facilities, supplies, school materials, and utilities were furnished by the school system.

The Department of Public Welfare, Vocational Rehabilitation Agency, and Juvenile Court each assigned a full-time experienced counselor or social worker to the program. The counselor assigned from the Department of Public Welfare was responsible for providing professional social work services and obtaining and coordinating the resources of that department. The counselor assigned to the project by the Juvenile Court was responsible for supervising those students on probationary status, interpreting the function and activities of the Juvenile Court and Probationary Department to other staff members, and securing the necessary legal power to enforce the recommendations of the project personnel. The counselor assigned from the Vocational Rehabilitation Agency was responsible for providing traditional rehabilitation services for participating individuals meeting agency criteria for acceptance, diagnostic evaluations, both medical and psychological, and for providing vocational counseling and the financing of on-the-job-training.

#### The Education Program

The curriculum for the experimental students was not basically different from that of the control group. The students, for the most part, enrolled in classes within the regular instructional program,

except for one period a day. The adjustments made in the school program for the experimental group were:

1. Each student in the experimental group was assigned to one of the three project teachers for "supervised study." This teacher provided individualized counseling and helped the student with his regular instructional program.

2. All students in the experimental group were administered a battery of tests which included mental ability, achievement, interest inventories, aptitude, and personality tests. The test results helped the supervised study teacher and project personnel counsel the student.

All students in the experimental group were enrolled in the supervised study course and received credit for this course as an elective. There was a minimum of 10 and a maximum of 15 students enrolled in this course for any one hour. This course provided individualized instruction and counseling for the students. Working with small groups of these students enabled the teachers to build rapport and to know the needs and potentials of each individual. The students in the supervised study classes were grouped, as nearly as possible, according to their educational achievement, native ability, chronological age and grade placement.

Each teacher assigned to the program had four supervised study periods each day with a total of about 50 students. The remainder of the day was allowed the teacher to work on job placement and supervision, to do individual counseling, and to work with the educational team and the coordinating team. This time was also used by the teacher for visits with the faculty, parents, and agencies. In order to adequately prepare for the supervised study course, the teacher worked with all of the



students' teachers. This involved learning what the students' teachers were expecting of each student in their various courses and helping the teachers gain a more thorough understanding of the student's individual abilities and needs.

The experimental group's educational program included special group counseling. The psychologist supervised the group counseling and the treatment program for individuals with the more common behavior problems. Students with serious problems were referred for further psychological services. A project teacher and an agency counselor were co-leaders of each group counseling session. The psychologist provided guidance and careful preparation of the teachers and counselors for this role. The group counseling program was an adaptation of the programs developed in the Boley and Tecumseh Training Schools and utilized many of the recommendations made by Glasser and Iverson (1963). A pre-service program was developed for the teachers and counselors who lead the group counseling sessions. The pre-service experiences included observations and practicums at Boley, Helena and Tecumseh Training Schools and the Lakeside Home, a detention center of the Tulsa Juvenile Court. Many group sessions were taped and later critiqued by the psychologist.

#### The Control and Experimental Groups

Records were examined for all students enrolled in grades seven through twelve during the school year 1964-65 in Carver or Roosevelt Junior High School or Central High School, Tulsa, Oklahoma. All students in this group with behavior problems as defined in Chapter I were identified and served as subjects for the experiment. The subjects were

paired by age, grade placement, sex, race, intelligence, and behavior problems. Members of each pair were then randomly assigned to either the control or experimental group. The program of counseling for the control group was the conventional one in which the school counselors, field youth counselor of the Welfare Department, the probation counselor of the Juvenile Court and the Vocational Rehabilitation counselor worked in their regular agency roles. Referrals, coordination and communication were left to the routine day-to-day counseling of students known to their agency. The experimental group was assigned to the education program described above.

#### Instrumentation

The half days present, grade point average, school offenses and court referrals were selected for statistical treatment and inference. These data were used to evaluate the effectiveness of interagency coordination of counseling services in the alleviation of behavior problems. It was believed that the measurement of changes in these four variables would be significant. The selection of these four variables was consistent with recommendations and research findings reported in professional literature.<sup>1</sup>

Half days present, grade point averages and number of school offenses were secured from cumulative school records for each subject for the school years 1964-65. The number of court referrals were

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<sup>1</sup>The following references are cited to substantiate this statement: Toby & Toby, 1961; Ahmann, 1963; Cloward & Jones, 1963; Healy & Brown, 1963; Goldberg, 1964; Short, 1964; Ebel, 1965; Havinghurst, Bowman, Liddle, Mathews & Pierce, 1966; Polk & Richmond, 1966; Webb, Gerlock, Schultz & Baker, 1967; and National Research Training Institute, 1967.

secured from the official legal intake files of the Juvenile Court for each subject for the school years 1964-65 and 1965-66. Appendix A summarizes data for the control group, and Appendix B, for the experimental group.

The analysis of covariance, a statistical technique combining elements of analysis of variance and linear regression, was used as a test of significance for comparing the two groups (Edwards, 1950; Wert, Almond & Neidt, 1959). The four variables for the school year 1964-65 was held constant while the significance of observed differences was tested separately for each of the four variables for the year 1965-66. The analysis of data is presented in Chapter IV.

## CHAPTER IV

### ANALYSIS OF DATA

The purpose of this investigation was to determine the relative effectiveness of the conventional counseling services of the public schools, juvenile court, vocational rehabilitation and welfare departments and the coordinated counseling services provided the experimental group. The following null hypothesis was proposed: there is no difference in behavior, as measured by the half days present in school, grade point average, school offenses, and court referrals, between the control and the experimental groups when the variables of the prior school year's half days present, grade point average, school offenses and court referrals are statistically controlled. This hypothesis was tested through analysis of covariance. This procedure provides a test of significance for the comparison of two or more groups on a predetermined criterion while simultaneously holding constant one or more variable characteristics on which the group members have been measured (Edwards, 1950; Wert, et al., 1959). Since the covariance technique makes it possible to achieve a very precise equating of the groups on initial differences, it is a very powerful and versatile statistical procedure. By means of this procedure a test was made of the significance of the difference in the levels of behavior of the two groups.

The four variables shown in Table 7 for the school year 1964-65,  $X_1$ ,  $X_2$ ,  $X_3$ , and  $X_4$ , were held constant while the significance of observed differences was tested separately for each of the four variables,  $Y_1$ ,  $Y_2$ ,  $Y_3$ , and  $Y_4$ , for the school year 1965-66.

TABLE 7  
VARIABLES

Variable	Identifying Symbols	
	Control 1964-65	Criterion 1965-66
Half Days Present	$X_1$	$Y_1$
Grade Point Average	$X_2$	$Y_2$
School Offenses	$X_3$	$Y_3$
Court Referrals	$X_4$	$Y_4$

Shown in Table 8 are the sums and means for the four selected measures of deviant behavior during the year 1964-1965 and the year 1965-1966, together with the observed change for each variable. Inspection of this table suggests that the experimental group has made greater improvement in average grade point and number of school offenses than has the control group. Analysis of covariance was used to test the significance of the observed differences. The raw data for the two groups are in Appendix A and Appendix B.

Shown in Table 9 are the sums and means of the scores for the control and experimental groups and for the total population sample.

TABLE 8

SUMMARY OF OBSERVED CHANGES ON FOUR MEASURES  
OF DEVIANT BEHAVIOR

N	Variable Number of Students	Control Group 84		Experimental Group 75	
		Total	Mean	Total	Mean
X <sub>1</sub>	Half days present 1964-65	27,119	322.8	24,048	320.6
Y <sub>1</sub>	Half days present 1965-66	<u>26,633</u>	<u>317.0</u>	<u>23,587</u>	<u>314.4</u>
	Observed change	-486	-5.8	-461	-6.2
X <sub>2</sub>	Grade point total 1964-65	1,528	18.1	1,330	17.7
Y <sub>2</sub>	Grade point total 1965-66	<u>1,418</u>	<u>16.8</u>	<u>1,484</u>	<u>19.7</u>
	Observed change	-110	-1.3	+154	+2.0
X <sub>3</sub>	School offenses 1964-65	419	4.9	564	7.5
Y <sub>3</sub>	School offenses 1965-66	<u>309</u>	<u>3.6</u>	<u>369</u>	<u>4.9</u>
	Observed change	-110	-1.3	-195	-2.6
X <sub>4</sub>	Court referrals 1964-65	25	.298	31	.413
Y <sub>4</sub>	Court referrals 1965-66	<u>9</u>	<u>.100</u>	<u>17</u>	<u>.227</u>
	Observed change	-16	-.198	-14	-.186

Summarized in Table 10 are the sums of squares and sums of cross products in raw score form for the experimental students and for the control students. In Table 11 are the deviation sums of squares and sums of cross products for the total group. The pooled deviation sums of squares and sums of cross products for the within sub-groups are presented in Table 12.

Written in deviation form, the regression equation based upon the preceding is:

$$y = a_1x_1 + a_2x_2 + a_3x_3 + a_4x_4$$

The four normal equations which are needed for the successive determination of the constants of the regression equation for each of

TABLE 9  
SUMS AND MEANS OF SCORES

	Control Group (N = 84)		Experimental Group (N = 75)		Total (N = 159)	
	Sums of Scores	Means of Scores	Sums of Scores	Means of Scores	Sums of Scores	Means of Scores
Post Test:						
Half days present 1965-66	26,633	317.060	23,587	314.493	50,220	315.849
Grade point average 1965-66	1,418	16.881	1,484	19.787	2,902	18.252
School offenses 1965-66	309	3.679	369	4.920	678	4.264
Court referrals 1965-66	9	.107	17	.227	26	.164
Pretest:						
Half days present 1964-65	27,119	322.845	24,048	320.640	51,167	321.805
Grade point average 1964-65	1,528	18.190	1,330	17.733	2,858	17.975
School offenses 1964-65	419	4.988	564	7.520	983	6.182
Court referrals 1964-65	25	.298	31	.413	56	.352

TABLE 10

MATRIX OF SUMS OF SQUARES AND SUMS OF CROSS PRODUCTS  
IN RAW SCORE FORM FOR THE TOTAL SAMPLE

Criterion Variables					Control Variables			
Half Days Present	Grade Point Aver.	School Offenses	Court Referrals	Half Days Present	Grade Point Aver.	School Offenses	Court Referrals	
Post Test: Half Days Present	15,980,030							
Post Test: Grade Point Aver.	58,346							
Post Test: School Offenses		8,194						
Post Test: Court Referrals			34					
Pretest: Half Days Present	16,234,592	941,133	218,037	8,279	16,630,241			
Pretest: Grade Point Aver.	910,637	54,738	11,975	469	930,679	56,542		
Pretest: School Offenses	309,264	17,676	6,163	214	317,567	17,213	14,267	
Pretest: Court Referrals	17,137	991	217	20	17,881	980	348	
							98	



TABLE 11

MATRIX OF SUMS OF SQUARES AND SUMS OF CROSS PRODUCTS IN  
DEVIATION FORM FOR THE TOTAL SAMPLE

Criterion Variables					Control Variables			
	Half Days Present	Grade Point Aver.	School Offenses	Court Referrals	Half Days Present	Grade Point Aver.	School Offenses	Court Referrals
Post Test: Half Days Present	118,090.377							
Post Test: Grade Point Aver.		5,379.937						
Post Test: School Offenses			5,302.906					
Post Test: Court Referrals				29.748				
Pretest: Half Days Present	73,543.321	7,254.799	-146.811	-87.931	164.442.956			
Pretest: Grade Point Aver.	7,940.396	2,575.006	-211.943	1.654	10,960.220	5,169.899		
Pretest: School Offenses	1,215.623	-265.296	1,971.340	53.258	1,232.654	-456.270	8,189.711	
Pretest: Court Referrals	550.547	-31.088	-21.792	10.843	-140.082	-26.591	1.786	78.277

TABLE 12

MATRIX OF POOLED SUMS OF SQUARES AND SUMS OF CROSS PRODUCTS IN  
DEVIATION FORM FOR WITHIN SUBGROUPS

Criterion Variables					Control Variables			
Half Days Present	Grade Point Average	School Offenses	Court Referrals		Half Days Present	Grade Point Average	School Offenses	Court Referrals
Post Test: Half Days Present	117,829.449							
Post Test: Grade Point Aver.	5,045.397							
Post Test: School Offenses		5,241.841						
Post Test: Court Referrals			29.183					
Pretest: Half Days Present	73,319.094	7,508.692	38.339	77.487	164,250.268			
Pretest: Grade Point Aver.	7,893.915	2,627.638	189.457	3,819	10,920.276	5,161.619		
Pretest: School Offenses	-958.180	-556.799	1,846.799	41.267	1,453.885	-410.410	7,935.708	
Pretest: Court Referrals	-538.781	-44.411	-27.484	10.294	-129.971	-24.495	-9.822	77.747

the four criterion variables are:

$$\sum x_1 y = a_1 \sum x_1^2 + a_2 \sum x_1 x_2 + a_3 \sum x_1 x_3 + a_4 \sum x_1 x_4$$

$$\sum x_2 y = a_1 \sum x_1 x_2 + a_2 \sum x_2^2 + a_3 \sum x_2 x_3 + a_4 \sum x_2 x_4$$

$$\sum x_3 y = a_1 \sum x_1 x_3 + a_2 \sum x_2 x_3 + a_3 \sum x_3^2 + a_4 \sum x_3 x_4$$

$$\sum x_4 y = a_1 \sum x_1 x_4 + a_2 \sum x_2 x_4 + a_3 \sum x_3 x_4 + a_4 \sum x_4^2$$

The total deviation values shown in Table 11 are substituted into the four normal equations which are then solved simultaneously for the respective values of the constants  $a_1$ ,  $a_2$ ,  $a_3$ , and  $a_4$  for each of the variables  $Y_1$ ,  $Y_2$ ,  $Y_3$ , and  $Y_4$ . The normal equations were solved simultaneously by means of an IBM-1401 computer. The solution of these equations yields the following total values for the constants for the analysis of covariance.

	$Y_1$	$Y_2$	$Y_3$	$Y_4$
$a_1$	.40066846	.01271637	.00118852	-.00067068
$a_2$	.63996280	.46929689	-.01880701	.00304776
$a_3$	-.17175540	-.00811520	.23990418	.00674364
$a_4$	-6.09497740	-.21478974	-.29238543	.13820212

The sum of the squares of residuals for total is equal to:

$$\sum y^2 - a_1 \sum x_1 y + a_2 \sum x_2 y + a_3 \sum x_3 y + a_4 \sum x_4 y$$

By substituting the values relative to each criterion variable in the equation for computing the sum of squares of residuals for total, the sum of squares was calculated to be 79,977.968 for half days present, 4,070.410 for grade point average, 4,819.441 for school offenses, and 27.826 for court referrals. These computations are in Appendix C.

Using the values from Table 12 the normal equations for the within subgroup deviations were solved for the respective values of  $a_1$ ,

$a_2$ ,  $a_3$ , and  $a_4$  in a similar manner. The solution of these equations yielded the following values for the constants needed for completing the analysis of covariance.

	$Y_1$	$Y_2$	$Y_3$	$Y_4$
$a_1$	.40053739	.01439152	-.00142758	-.00062517
$a_2$	.63968737	.47282176	-.01683694	.00314158
$a_3$	-.16856715	-.4884801	.23170007	.00562926
$a_4$	-6.08009660	-.40436975	-.33192542	.13305964

By substituting the values relative to each criterion variable in the equation for computing the sum of squares of residuals for the within deviations, the sum of squares was calculated to be 79,975.413 for half days present, 3,649.775 for grade point average, 4,801.570 for school offenses, and 27.521 for court referrals. These computations are in Appendix D. The next step was to determine the number of degrees of freedom for the within subgroups. For the entire sample, the number of degrees of freedom is one less than the number of cases, or 158. Each of the control factors  $X_1$ ,  $X_2$ ,  $X_3$ , and  $X_4$  accounts for one degree of freedom or a total of four, while one more degree is removed by the method relationship. When these five degrees of freedom, assigned to specific sources were subtracted from the number for the entire sample, the number of degrees of freedom within subgroups was determined to be 153. The mean squares were obtained by dividing the within subgroups sum of squares and the sum of squares for the difference by the appropriate number of degrees of freedom.

The F ratio was computed by dividing the mean square for the difference by the mean square for within subgroups. With 1 and 153 degrees of freedom, F at the .05 level of confidence is tabled at 3.91.

The determination of the correct number of degrees of freedom, the sums of squares, and the mean squares for half days present 1965-1966 are presented in Table 13.

TABLE 13  
THE SUMS OF SQUARES, MEAN SQUARES, AND DEGREES OF  
FREEDOM FOR HALF DAYS PRESENT

Source of Variation	Residuals		
	Degrees of Freedom	Sum of Squares	Mean Square
Total	154	79,977.968	
Within Subgroups	<u>153</u>	<u>79,975.413</u>	<u>522.715</u>
Difference	1	2.555	2.555

$$F_1, 153 = \frac{2.555}{522,715} = .005$$

Note. - With 1 and 153 degrees of freedom, F at the .05 level of confidence is 3.91.

Since the observed F ratio does not exceed 3.91, the null hypothesis was accepted. It was found that a statistically significant difference in half days present between the control and experimental groups had not been demonstrated on the basis of their school attendance when the variable factors of previous school attendance, grade point average, school offenses, and court referrals are controlled.

The F value of .005 for half days present is nonsignificant. Therefore, in so far as grade point average, school offenses, and court referrals are controlled, and no other pertinent factor related to school attendance contributes a bias, the effectiveness of the two

methods was not proven unequal.

The sums of squares, mean squares, and degrees of freedom for grade point average were calculated in the same manner as for Table 13. These data are presented in Table 14.

TABLE 14  
THE SUMS OF SQUARES, MEAN SQUARES, AND DEGREES OF  
FREEDOM FOR GRADE POINT AVERAGE

Source of Variation	Degrees of Freedom	Residuals	
		Sum of Squares	Mean Square
Total	154	4,070.410	
Within Subgroups	<u>153</u>	<u>3,649.775</u>	<u>23.855</u>
Difference	1	420.635	420.635

$$F_1, 153 = \frac{420.635}{23.855} = 17.633$$

Note. - With 1 and 153 degrees of freedom, F at the .05 level of confidence is 3.91.

Since the observed F ratio exceeds 3.91, the null hypothesis was rejected at the .05 level of confidence. It was concluded that a statistically significant difference in grade point average between the control and experimental groups does exist when the variable factors of previous school attendance, grade point average, school offenses and court referrals were controlled. The F value of 17.633 for grade point average is significant. Thus, when school attendance, school offenses, and court referrals were controlled, evidence existed that the interagency method of counseling influences grade point average in school.

The sums of squares, mean squares, and degrees of freedom for school offenses are shown in Table 15.

TABLE 15

THE SUMS OF SQUARES, MEAN SQUARES, AND DEGREES OF  
FREEDOM FOR SCHOOL OFFENSES

Source of Variation	Degrees of Freedom	Residuals	
		Sum of Squares	Mean Square
Total	154	4,819.441	
Within Subgroups	<u>153</u>	<u>4,801.570</u>	<u>31.383</u>
Difference	1	17.871	17.871
$F_{1, 153} = \frac{17.871}{31.383} = .569$			

Note. - With 1 and 153 degrees of freedom, F at the .05 level of confidence is 3.91.

Since the observed F ratio does not exceed 3.91, the null hypothesis is accepted. It was found that a statistically significant difference in school offenses between the control and experimental groups had not been demonstrated on the basis of their school offenses when the variable factors of previous school attendance, grade point average, school offenses, and court referrals are controlled.

The sums of squares, mean squares, and degrees of freedom for court referrals are shown in Table 16. Since the observed F ratio does not exceed 3.91, the null hypothesis is accepted. It was found that a statistically significant difference in court referrals between the control and experimental groups had not

TABLE 16

THE SUMS OF SQUARES, MEAN SQUARES, AND DEGREES  
OF FREEDOM FOR COURT REFERRALS

	Degrees of Freedom	Residuals	
		Sum of Squares	Mean Square
Total	154	27.826	
Within Subgroups	<u>153</u>	<u>27.521</u>	<u>.180</u>
Difference	1	.305	.305
$F_1, 153 = \frac{.305}{.180} = 1.694$			

Note. - With 1 and 153 degrees of freedom, F at the .05 level of confidence is 3.91.

been demonstrated on the basis of their court referrals when the variable factors of previous school attendance, grade point average, school offenses, and court referrals are controlled.

The null hypotheses of this experiment that there are no statistically significant differences between the experimental and control groups in half days present, in school offenses, and in court referrals were accepted. The null hypothesis of this experiment that there is no statistically significant difference between the experimental and the control groups in grade point average was rejected.

Adjustment of Criterion Means

Inspection of the observed means in Table 8 reveals that the experimental students had higher severe behavior scores as observed in  $X_1$ ,  $X_2$ ,  $X_3$ , and  $X_4$  during the 1964-65 school year. The experimental students had less days present in school, a smaller mean grade point



average, more school offenses and more juvenile court referrals in 1964-65 than the control group.

A more accurate view of the differences between the two groups can be secured by adjusting the criterion means of the subgroups. By substituting in the within subgroups regression equation the differences between the subgroup means of the control variables and the general mean of the control variables, the adjustment term for each criterion mean was calculated as shown in Appendix F. Shown in Table 17 are these adjusted means.

Null hypotheses one, three, and four were accepted at the .05 level of confidence. Null hypothesis two was rejected and it was concluded that the observed difference in mean grade point average between the experimental and the control groups with the independent variables held constant was significant at the .05 level of confidence. Thus, adjusting the means of the experimental and control groups did not result in any significant changes in the acceptance or rejection of the four hypotheses.

#### The Significance of Linear Regression

One of the fundamental assumptions of the analysis of covariance is that there is a linear relationship between the criterion and the control variables. In this investigation, the significance of linear regression was determined by the following procedure:

1. The total sum of squares in the criterion because of multiple regression of the control variables was computed by substituting the values of the constants from Page 50 and the values of the cross products from Table 11 in the equation. Computations are shown in

TABLE 17

## ADJUSTED CRITERION MEANS FOR 1965-1966 PERFORMANCE DATA

Variable	Experimental	Control	F ratio
Half days present	315.712	315.976	.005
Grade point average	19.999	16.684	17.633
School offenses	4.624	3.943	.569
Court referrals	.211	.121	1.694

Note. - With 1 and 153 degrees of freedom, F at the .05 level of confidence is 3.91.

Appendix E. Sum of squares for regression =

$$a_1 \sum x_1 y + a_2 \sum x_2 y + a_3 \sum x_3 y + a_4 \sum x_4 y$$

For half days present = 38,112.409

For grade point average = 1,309.527

For school offenses = 483.465

For court referrals = 1.922

2. The sum of squares of the residuals for  $Y_1$ ,  $Y_2$ ,  $Y_3$ , and  $Y_4$  were obtained from Tables 13, 14, 15 and 16.

3. The F value was calculated to test the following null hypotheses at the .05 level of confidence: (a) there is no relationship between half days present and the variables controlled in this investigation, (b) there is no relationship between grade point average and the variables controlled in this investigation, (c) there is no relationship between school offenses and the variables controlled in this investigation, and (d) there is no relationship between court referrals and the variables controlled in this investigation.

The analysis for half days present is presented in Table 18.

TABLE 18

ANALYSIS OF MULTIPLE REGRESSION BETWEEN THE FOUR CONTROL  
VARIABLES AND  $Y_1$  CRITERION VARIABLE (HALF DAYS PRESENT)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Regression	4	38,112.409	9,528.102
Residuals	<u>154</u>	<u>79,977.968</u>	<u>519.337</u>
Total	158	118,090.377	
$F_{4, 154} = \frac{9528.102}{519.337} = 18.347$			

Since the F ratio exceeds the tabled value of F with 4 and 154 degrees of freedom at the .05 level of confidence (2.43), the null hypothesis that there is no relationship between half days present (1965-1966 school year) and the variables controlled in this investigation was rejected. With an F value of 18.347, the existence of a linear relationship between half-days present and the control variables was demonstrated.

The analysis for grade point average is presented in Table 19. F is the ratio of regression mean square to residual mean square and is 12.386 with 4 and 154 degrees of freedom. Since the F ratio exceeds the tabled value of F with 4 and 154 degrees of freedom at the .05 level of confidence (2.43) the null hypothesis that there is no relationship between half days present for 1965-66 school year and the variables

TABLE 19

ANALYSIS OF MULTIPLE REGRESSION BETWEEN FOUR CONTROL  
VARIABLES AND  $Y_2$ , CRITERION VARIABLE (GRADE POINT)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Regression	4	1,309.527	327.382
Residuals	<u>154</u>	<u>4,070.410</u>	<u>26.431</u>
Total	158	5,379.937	

$$F_{4, 154} = \frac{327.382}{26.431} = 12.386$$

controlled in this investigation was rejected. With an F value of 12.386, the existence of a linear relationship between grade point average and the control variables was demonstrated. The analysis for school offenses is presented in Table 20.

TABLE 20

ANALYSIS OF MULTIPLE REGRESSION BETWEEN FOUR CONTROL  
VARIABLES AND  $Y_3$ , CRITERION VARIABLE (SCHOOL OFFENSES)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Regression	4	483.465	120.866
Residuals	<u>154</u>	<u>4,819.441</u>	<u>31.295</u>
Total	158	5,302.906	

$$F_{4, 154} = \frac{120.866}{31.295} = 3.862$$

F is the ratio of regression mean square to residual mean square and is 3.862 with 4 and 154 degrees of freedom.

Since the F ratio with 4 and 154 degrees of freedom at the .05 level of confidence (2.43) the null hypothesis that there is no relationship between half days present for the 1965-66 school year and the variable controlled in this investigation was rejected. With an F value of 3.862 the existence of a linear relationship between school offenses and the control variables was demonstrated.

The analysis of court referrals is presented in Table 21.

TABLE 21

ANALYSIS OF MULTIPLE REGRESSION BETWEEN THE FOUR CONTROL VARIABLES AND  $Y_4$ , CRITERION VARIABLE (COURT REFERRALS)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Regression	4	1.922	.481
Residuals	<u>154</u>	<u>27.826</u>	<u>.181</u>
Total	158	29.748	
$F_{4, 154} = \frac{.481}{.181} = 2.657$			

Since each F ratio exceeds the tabled value of F with 4 and 154 degrees of freedom at the .05 level of confidence (2.43), each null hypothesis is rejected. The existence of a linear relationship between each of the criterion variables and the control variables has been verified.

Unless these sources of variation are removed, there is danger of drawing unwarranted conclusions concerning the observed differences between the experimental and control groups. In the present study, it was observed that from the beginning the pupils in the experimental group were more severely handicapped by behavior disorders as indicated by attendance, grade point total, school offenses and court referrals (See Table 8). Since evidence has shown that there is a significant relationship between these factors and the criterion measures, it is desirable that through the principles of regression upon which the analysis of covariance is based, these sources of variation be removed, leaving to be compared only the sum of squares for residuals. This sum of squares for residuals can more safely be assumed to represent the variation attributable to the experimental treatment.

The proportion of the regression sum of squares contributed by any single variable is computed by dividing the absolute sum of the terms by the absolute value of the individual term. The relative contribution of the four control variables are calculated in Table 22 for each of the criterion variables.

It is apparent that in the prediction of half days present,  $X_1$  and  $X_2$  (half days present and grade point average) are contributing significantly to the regression sum of squares so that when these two variables are used as control variables for predicting half days present in school, then school offenses and court referrals can be eliminated without appreciable loss.

Grade point average for the previous year is the most accurate predictor of grade point average for the current year. Half days present, school offenses and court referrals can be eliminated without

TABLE 22

CONTRIBUTION OF EACH CONTROL VARIABLE TO THE  
PREDICTION OF THE CRITERION VARIABLES

Criterion Y <sub>1</sub> Half Days Present	Criterion Y <sub>3</sub> School Offenses
$X_1 \frac{29,466.489}{38,112.409} = .773$	$X_1 \frac{.174}{483.465} = .001$
$X_2 \frac{5,081.558}{38,112.409} = .133$	$X_2 \frac{3.986}{483.465} = .008$
$X_3 \frac{208.790}{38,112.409} = .006$	$X_3 \frac{472.933}{483.465} = .978$
$X_4 \frac{3,335.572}{38,112.409} = .088$	$X_4 \frac{6.372}{483.465} = .013$
Criterion Y <sub>2</sub> Grade Point Average	Criterion Y <sub>4</sub> Court Referrals
$X_1 \frac{92,255}{1,309.527} = .070$	$X_1 \frac{.059}{1.922} = .031$
$X_2 \frac{1,208.442}{1,309.527} = .923$	$X_2 \frac{.005}{1.922} = .002$
$X_3 \frac{2.153}{1,309.527} = .002$	$X_3 \frac{.359}{1.922} = .187$
$X_4 \frac{6.677}{1,309.527} = .005$	$X_4 \frac{1.499}{1.922} = .780$

appreciable loss.

School offenses for the previous year are the most accurate predictor of school offenses for the current year. Half days present, grade point average and court referrals can be eliminated without appreciable loss.

Court referrals and school offenses were found to be the best control variables for predicting court referrals, permitting the

elimination of grade point average and half days present without appreciable loss.

### Summary

The sums and means of the scores, the sums of squares and cross products in raw score form, and the deviation sums of squares and cross products for total and within were computed. These deviation values were substituted in the regression equations which were then solved for the needed constants. The appropriate number of degrees of freedom were determined and the mean squares calculated for the within subgroups for the difference. By dividing the mean square for the difference by the mean square for within subgroups, the F value was calculated.

Since the obtained value of F did not exceed the tabled value of F at the .05 level of confidence, the null hypothesis could not be rejected for half days present, school offenses and court referrals. Since the obtained value of F exceeded the tabled value of F at the .05 level of confidence, the null hypothesis was rejected for grade point average. The findings of this investigation offer no evidence of the efficiency of interagency coordination on the alleviation of behavior problems as measured by half days present in school, school offenses and court referrals. There is a statistically significant difference in behavior as measured by grade point averages of the two groups compared. It may be concluded that only limited evidence has been presented in support of the hypothesis that intensive planned and coordinated guidance and counseling services rendered by the public schools, Department of Public Welfare, Vocational Rehabilitation, and



Juvenile Court would decrease the degree or frequency of behavior incidents among students characterized as being "behavior problems."

## CHAPTER V

### SUMMARY

This investigation compared the relative effectiveness of the conventional counseling services and the coordinated counseling services provided by an interagency community project titled "A Cooperative Program for the Alleviation of Juvenile Behavior Problems" (RD 1855-G, Vocational Rehabilitation). Subjects were students enrolled in grades seven through twelve in Carver and Roosevelt Junior High Schools and Central High Schools of the Tulsa (Oklahoma) Public Schools who were identified as exhibiting behavior problems. Subjects were placed in a control or experimental group. The groups were paired as closely as possible in relation to the following factors: age, sex, grade, mental maturity, race, and degree of problem behavior. Subjects in the control group continued in the regular school curriculum and received no special assistance other than that conventionally provided. Subjects in the experimental group were enrolled in "Supervised Study" and received the coordinated counseling service provided by the interagency community program. Supervised Study was the focal point for individualized study, group counseling, and coordinated staffing and counseling of students by the probation counselor of the Juvenile Court, the field youth counselor of the Department of Welfare, the Vocational Rehabilitation counselor, and the supervised study teachers.

The half days present in school, grade point average, school offenses and court referrals were the data used to evaluate the effectiveness of the interagency community approach for the alleviation of behavior problems of students. It was assumed that the measurement of these four variables would reveal significant change in the behavior problems of students. For each of these four variables, comparable information was gathered for the school year 1964-65 and at the close of the school year 1965-66. By means of multiple regression analysis, a significant linear relationship was shown to exist between each of the criterion variables and the corresponding control variables from the previous year. Each of the control variables for the school year 1964-65 was found to be the most accurate single predictor of the corresponding criterion variable for the 1965-66 school year. That is, the most accurate predictor of half days present was the number of half days present during the previous school year. For grade point average the best predictor was the previous year's grade point average, for school offenses it was the previous record of school offenses, and for court referrals it was the number of prior court referrals.

These four factors for the 1964-65 school year were held constant through analysis of covariance, while the significance of observed differences for the 1965-66 year was tested separately for each of the four criterion variables.

### Findings

Major findings of this study were related to four hypotheses. The hypotheses and related findings are listed below.

1. Null hypothesis one: there is no significant difference

in the experimental and control groups in half days present in school. An F ratio of .005 was obtained on the adjusted criterion means of half days present in school for 1965-66, and this hypothesis was accepted.<sup>1</sup>

2. Null hypothesis two: there is no significant difference between the experimental and control groups in the mean grade point average. An F ratio of 17.633 was obtained on the adjusted criterion means of grade point average, and this hypothesis was rejected. There was a significant difference between the experimental and control groups in the mean grade point average. The mean grade point average for the control group showed a loss and that of the experimental group showed a gain from 1964-65 to 1965-66.

3. Null hypothesis three: there is no significant difference between the experimental and control groups in school offenses. An F ratio of .569 was obtained on the adjusted criterion means of school offenses, and this hypothesis was accepted. There was no significant decrease in the number of school offenses as a result of planned and coordinated guidance and counseling services. There was a slight reduction in the average number of offenses in both groups from 1964-65 to 1965-66, with the greater reduction being in the experimental group.

4. Null hypothesis four: there is no significant difference between the experimental and control groups in juvenile court referrals. An F ratio of 1.694 was obtained on the adjusted criterion means of court referrals, and this hypothesis was accepted. There was no

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<sup>1</sup> With 1 and 153 degrees of freedom, F at the .05 level of confidence is tabled at 3.91.

significant decrease in the number of juvenile court referrals as a result of planned and coordinated guidance and counseling services. Both groups showed decreases in the average number of offenses from 1964-65 to 1965-66, with the control group showing a slightly greater reduction.

### Conclusions

The findings of this investigation, while they do not constitute conclusive evidence of the efficacy of interagency guidance and counseling services, do offer promise that this type of approach can assist youth with behavioral problems in grades seven through twelve to modify their antisocial behavior. The statistically significant difference in behavior as measured by grade point averages of the two compared groups has very important implications. School achievement is closely related to antisocial or deviant behavior of juveniles. Research has shown that increase in school performance tends to alleviate the adolescent's deteriorating concept of self and educational aspirations. It can be concluded that the experimental group had greater accessibility to educational opportunity and success upon which to build positive attitudes toward the school experience and prestige among their teachers, peers, administrators and parents.

This study has special significance for education in the inner city, poverty areas. Research has emphasized that school achievement is most difficult for lower class, urban, low income, non-white students and for students exhibiting behavior problems with low

measured intelligence. It is significant that all pupils in the experimental group lived in lower class neighborhoods, that 45 of the 75 pupils were non-white, and that the mean measured intelligence of the group was 89.737. The fact that such a group of subjects improved their grade point average significantly would indicate that the interagency program design shows promise for meeting some of the new social and economic demands on the schools in inner city areas.

There was no statistically significant difference in efficiency of interagency coordination on the alleviation of behavior problems as measured by half days present in school, school offenses and court referrals. However, it is probable that a longitudinal study would have shown more significant differences. It was obvious that only late in the year did the experimental group have more sophisticated group counseling sessions as the teachers and social workers of the project acquired experience. Furthermore, only late in the school year did the experimental group become involved to any major degree in character building programs of the broader community, such as scouting, Y. M. C. A. and Y. W. C. A. activities, and the VISTA recreation program. It may be assumed that the experimental program was responsible for the final participation of most of the experimental group in these programs because the control group did not become involved. Certainly the outcomes of these programs can be evaluated only on a longitudinal basis.

It is probable that the findings related to half days present, school offenses, and court referrals were related directly to the increased involvement of participating personnel and closer surveillance

of the experimental group. First, students may have reacted negatively to the increased attention they received, and this negative reaction may have taken the form of increased absences and offenses. Second, staff members may have become more sensitive to problem behavior and may have identified offenses more frequently.

The results of the study might have been different if agency administrative and supervisory personnel had been more carefully prepared for the project. Not all of the agencies were flexible enough to support innovation and change. Often there were emphases on clerical and administrative endeavor and attempts to redesign the program to fit the existing framework rather than emphases on becoming inventive, imaginative, resourceful and oriented for the change. Both the educational and coordinating teams were hindered by the inability of some immediate supervisors to adapt to the changes instigated by this program.

#### Recommendations

This study justifies the recommendation that interagency, community programs for the alleviation of juvenile behavior problems be developed and evaluated. Specific recommendations are listed below.

1. It is recommended that a follow-up study be made of the subjects of this investigation.
2. It is recommended that interagency, community programs provide services for young children whose behavior is more readily changed than that of adolescents.
3. It is recommended that the operational pattern be broadened to include other agencies with psychological, sociological, and

educational services for youths. Some of the agencies that should be included are: Employment, Health, Mental Health, Regents for Higher Education, and Vocational and Technical Education.

4. It is recommended that other interagency, community programs be developed and carefully evaluated. Three specific recommendations for evaluation are made: (a) longitudinal studies of the effectiveness of the programs should be made, (b) criteria variables in addition to the four used in this study should be used, and (c) evaluation should be made of the relative effectiveness of interagency, community programs and incarceration in correctional institutions for some juveniles.

5. Since this study has shown that for each criterion variable, from 77% to 98% of the regression variance can be controlled by the corresponding variable for the preceding year, the use of more than a single covariate with each criterion would be unnecessary. It is therefore recommended that this modification be made in any future replication of this study to simplify the research design.



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APPENDIX A

THE RAW SCORES FOR EACH OF THE FOUR VARIABLES AND  
THE FOUR CRITERIA VARIABLES FOR THE INDIVIDUALS  
OF THE CONTROL GROUP

# APPENDIX A

## THE RAW SCORES FOR EACH OF THE FOUR VARIABLES AND THE FOUR CRITERIA VARIABLES FOR THE INDIVIDUALS OF THE CONTROL GROUP

Student Number	Grade	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>
1 - 1	7	315	8	2	0	335	22	2	0
2 - 1	7	267	10	4	0	283	19	0	0
3 - 1	7	319	14	10	0	322	11	20	0
4 - 1	8	328	8	5	0	348	10	0	0
5 - 1	8	285	8	15	0	340	12	7	0
6 - 1	8	336	15	2	0	336	18	5	0
7 - 1	8	344	15	11	0	350	20	4	0
8 - 1	8	346	18	5	0	342	19	9	0
9 - 1	8	306	13	7	1	324	17	6	0
10 - 1	8	316	26	0	0	321	21	5	0
11 - 1	7	329	18	2	0	311	10	0	1
12 - 1	8	306	23	0	0	298	22	6	0
13 - 1	8	332	16	13	0	330	15	6	0
14 - 1	8	340	14	2	0	346	12	5	0
15 - 1	8	324	6	1	0	340	20	4	1
16 - 1	8	350	21	8	0	306	23	3	0
17 - 1	7	330	17	2	0	331	17	10	0
18 - 1	7	331	13	1	0	348	28	0	0
19 - 1	7	311	18	3	0	311	16	10	2
20 - 1	7	339	19	0	0	334	30	4	0
21 - 1	7	339	5	7	0	346	20	10	0
22 - 1	7	310	16	17	0	324	29	6	0
23 - 1	7	317	36	0	0	317	36	0	1
24 - 1	7	261	9	3	0	297	18	6	0
25 - 1	9	336	20	0	0	339	21	4	0
26 - 1	9	338	21	0	0	344	25	6	0
27 - 1	9	338	17	5	0	337	15	5	0
28 - 1	9	309	14	4	0	319	10	6	0
29 - 1	9	333	23	2	0	333	21	1	1
30 - 1	9	346	16	3	0	342	19	4	1
31 - 1	9	306	14	1	0	324	10	2	0
32 - 1	9	338	11	6	0	348	8	5	1
33 - 1	9	332	16	3	0	326	15	5	0
34 - 1	9	317	18	4	0	332	23	7	0
35 - 2	7	294	18	5	0	328	15	0	0
36 - 2	7	340	20	5	0	345	18	7	0

Code Student Number - 1 = Roosevelt, 2 = Carver, 3 = Central  
Y<sub>1</sub> Half days present in 1965-66 X<sub>1</sub> Half days present in 1964-65  
Y<sub>2</sub> Grade point average in 1965-66 X<sub>2</sub> Grade point average in 1964-65  
Y<sub>3</sub> School offenses in 1965-66 X<sub>3</sub> School offenses in 1964-65  
Y<sub>4</sub> Court referrals in 1965-66 X<sub>4</sub> Court referrals in 1964-65

## APPENDIX A - Continued

Student Number	Grade	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>
37 - 2	7	325	13	9	0	348	17	12	0
38 - 2	7	330	23	0	0	343	25	0	0
39 - 2	7	338	20	3	1	346	37	0	0
40 - 2	7	294	17	5	0	320	13	0	2
41 - 2	7	279	18	2	1	336	19	15	1
42 - 2	7	350	23	0	0	350	23	0	0
43 - 2	8	332	25	1	0	316	21	0	0
44 - 2	8	347	24	2	0	331	20	5	0
45 - 2	8	341	23	2	0	350	26	1	0
46 - 2	8	338	20	3	0	331	18	1	0
47 - 2	8	315	19	7	0	336	20	20	1
48 - 2	8	341	12	3	1	342	15	1	0
49 - 2	8	325	22	2	0	343	19	17	0
50 - 2	8	304	13	1	0	311	19	2	0
51 - 2	8	303	19	2	0	313	24	0	2
52 - 2	8	316	18	4	1	340	19	1	0
53 - 2	8	264	15	5	0	295	6	12	0
54 - 2	9	344	23	1	0	342	18	0	0
55 - 2	8	284	18	18	3	341	23	15	2
56 - 2	8	235	11	2	0	318	6	1	1
57 - 2	8	268	14	5	0	306	25	1	3
58 - 2	10	294	8	3	0	320	11	4	0
59 - 2	9	273	21	1	0	259	20	3	0
60 - 2	9	340	25	2	0	332	21	18	0
61 - 2	9	328	17	8	1	320	14	1	0
62 - 2	9	342	18	6	0	348	19	16	0
63 - 2	9	274	14	10	0	316	14	12	0
64 - 2	9	300	23	3	0	340	30	1	0
65 - 2	9	311	16	1	0	350	20	2	1
66 - 2	8	260	15	3	0	232	10	4	0
67 - 2	9	348	27	2	0	341	22	1	0
68 - 2	9	338	21	15	0	344	16	10	0
69 - 2	9	317	16	6	0	339	20	8	0
70 - 2	9	299	18	2	0	337	22	2	1
71 - 3	10	346	29	0	0	339	26	12	0
72 - 3	10	297	5	1	0	281	20	6	0
73 - 3	10	309	12	2	0	315	16	6	0
74 - 3	10	330	18	0	0	329	20	0	0
75 - 3	10	334	10	0	0	210	16	0	0
76 - 3	10	349	28	0	0	350	21	0	0
77 - 3	11	305	18	0	0	274	6	9	0
78 - 3	11	250	8	1	0	147	4	1	0
79 - 3	11	276	3	6	0	285	10	3	1
80 - 3	12	332	12	0	0	331	15	8	0
81 - 3	12	309	17	1	0	282	14	0	0
82 - 3	12	325	24	0	0	325	24	2	0
83 - 3	12	344	30	0	0	325	16	3	0
84 - 3	12	323	12	1	0	333	4	3	0

APPENDIX B

THE RAW SCORES FOR EACH OF THE FOUR VARIABLES AND  
THE FOUR CRITERIA VARIABLES FOR THE INDIVIDUALS  
OF THE EXPERIMENTAL GROUP

# APPENDIX B

## THE RAW SCORES FOR EACH OF THE FOUR VARIABLES AND THE FOUR CRITERIA VARIABLES FOR THE INDIVIDUALS OF THE EXPERIMENTAL GROUP

Student Number	Grade	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>
1 - 1	7	333	33	0	0	330	20	5	0
2 - 1	7	340	26	2	0	350	15	3	0
3 - 1	7	292	12	5	1	240	13	9	0
4 - 1	7	294	15	4	1	281	23	14	2
5 - 1	7	339	25	8	0	350	26	9	0
6 - 1	7	333	23	3	0	340	17	6	0
7 - 1	7	339	19	2	0	348	18	6	0
8 - 1	7	322	14	13	1	336	15	30	0
9 - 1	7	335	20	2	0	337	26	5	0
10 - 1	8	260	8	7	0	293	17	9	0
11 - 1	8	313	13	2	0	328	16	7	0
12 - 1	8	289	16	5	0	348	10	10	0
13 - 1	8	256	14	0	0	230	17	5	1
14 - 1	8	336	21	0	0	340	18	10	0
15 - 1	8	267	18	3	0	284	15	7	0
16 - 1	8	222	18	1	0	328	16	6	0
17 - 1	8	282	8	1	0	339	15	11	0
18 - 1	8	316	21	0	0	318	19	6	0
19 - 1	8	329	10	3	0	334	13	8	0
20 - 1	8	300	22	7	0	335	16	8	0
21 - 1	9	330	19	3	0	342	23	6	0
22 - 1	9	318	19	1	0	342	16	4	1
23 - 1	9	350	23	2	0	344	20	6	0
24 - 1	9	231	18	1	0	295	16	2	1
25 - 1	9	347	20	5	0	337	16	5	0
26 - 1	9	288	20	1	0	299	12	12	2
27 - 1	9	295	18	7	1	292	14	4	0
28 - 2	7	326	23	0	0	346	25	0	0
29 - 2	7	290	18	4	0	328	14	12	0
30 - 2	7	296	18	1	1	315	11	6	0
31 - 2	7	330	23	0	0	298	25	0	0
32 - 2	7	289	18	9	1	316	19	12	0
33 - 2	7	285	13	7	1	127	0	10	1
34 - 2	7	306	21	0	1	338	12	0	2
35 - 2	7	348	22	12	0	339	23	0	0
36 - 2	7	321	23	50	0	306	20	0	0

Code Student Number - 1 = Roosevelt, 2 = Carver, 3 = Central

Y<sub>1</sub> Half days present in 1965-66

X<sub>1</sub> Half days present in 1964-65

Y<sub>2</sub> Grade point average in 1965-66

X<sub>2</sub> Grade point average in 1964-65

Y<sub>3</sub> School offenses in 1965-66

X<sub>3</sub> School offenses in 1964-65

Y<sub>4</sub> Court referrals in 1965-66

X<sub>4</sub> Court referrals in 1964-65

## APPENDIX B - Continued

Student Number	Grade	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>
37 - 2	7	250	15	30	0	305	13	10	0
38 - 2	7	337	23	12	0	348	21	2	1
39 - 2	8	346	23	5	0	338	20	0	0
40 - 2	8	309	22	0	0	321	23	1	1
41 - 2	8	344	22	1	0	329	20	0	0
42 - 2	8	327	15	6	1	334	20	0	0
43 - 2	8	337	25	2	1	344	24	1	1
44 - 2	8	317	15	9	0	328	17	4	2
45 - 2	8	283	18	8	0	274	12	20	0
46 - 2	8	332	19	5	0	335	19	4	3
47 - 2	8	310	26	8	0	317	19	0	0
48 - 2	8	294	20	0	0	264	15	0	0
49 - 2	8	266	12	6	1	336	22	2	0
50 - 2	9	339	23	15	0	326	22	30	0
51 - 2	9	326	33	0	0	307	23	2	0
52 - 2	9	310	25	0	0	286	19	0	0
53 - 2	9	346	21	3	0	342	13	1	0
54 - 2	9	252	15	7	0	257	15	5	1
55 - 2	9	274	14	9	0	315	14	4	0
56 - 2	9	290	23	15	0	314	26	30	0
57 - 2	9	295	19	4	0	316	17	10	0
58 - 2	9	344	24	5	0	346	19	8	0
59 - 2	9	349	23	5	0	348	18	18	0
60 - 2	9	343	26	1	0	288	24	0	0
61 - 2	9	331	22	3	1	342	17	4	0
62 - 2	9	331	18	3	2	335	15	1	2
63 - 2	9	328	27	2	0	348	30	1	0
64 - 2	9	343	24	5	0	343	23	36	1
65 - 2	9	339	27	2	0	333	20	12	2
66 - 2	9	292	19	10	1	312	17	36	0
67 - 3	11	326	13	2	0	312	8	1	0
68 - 3	10	345	28	0	1	338	21	15	0
69 - 3	10	310	23	0	0	314	20	6	1
70 - 3	10	349	18	0	0	341	12	4	0
71 - 3	10	315	18	1	0	320	15	3	0
72 - 3	10	348	18	0	0	342	11	4	2
73 - 3	10	303	21	0	0	339	19	0	0
74 - 3	11	320	22	0	1	327	21	0	3
75 - 3	11	340	13	14	0	331	15	36	1



APPENDIX C

COMPUTATION OF SUM OF SQUARES OF  
RESIDUALS FOR TOTAL

## APPENDIX C

### COMPUTATION OF SUM OF SQUARES OF RESIDUALS FOR TOTAL

For Half Days Present

$$\begin{aligned} &-(.40066846)(23,543.321) - (.63996280)(7940.396) \\ &-(.17175540)(1215.623) - (-6.09497740)(550.547) \\ &= 79977.968 \end{aligned}$$

For Grade Point Average

$$\begin{aligned} &5379.937 - (.01271637)(7254.799) - (.46929689)(2575.006) \\ &-(.00811520)(-265.296) - (-.21478974)(-31.088) \\ &= 4070.410 \end{aligned}$$

For School Offenses

$$\begin{aligned} &5302.906 - (-.00118852)(-146.811) - (-.01880701)(-211.943) \\ &-(.23990418)(1971.340) - (-.29238543)(-21.792) \\ &= 4819.441 \end{aligned}$$

For Court Referrals

$$\begin{aligned} &29.748 - (-.00067068)(-87.931) - (.00304776)(1.654) \\ &(.00674364)(53.258) - (.13820212)(10.843) \\ &= 27.826 \end{aligned}$$

APPENDIX D

COMPUTATION OF SUM OF SQUARES OF  
RESIDUALS THE WITHIN DEVIATION

APPENDIX D

COMPUTATION OF SUM OF SQUARES OF  
RESIDUALS THE WITHIN DEVIATION

For Half Days Present

$$\begin{aligned} 117829.449 &- (.40053739)(73319.094) - (.63968737)(7893.915) \\ &- (-.16856715)(-958.180) - (-6.08009660)(-538.781) \\ &= 79975.413 \end{aligned}$$

For Grade Point Average

$$\begin{aligned} 5045.397 &- (.01439152)(7508.692) - (.47282176)(2627.638) \\ &- (-.4884801)(-556.799) - (-.40436975)(-44.411) \\ &= 3649.775 \end{aligned}$$

For School Offenses

$$\begin{aligned} 5241.841 &- (-.00142758)(38.339) - (-.01683694)(189.457) \\ &- (.23170007)(1846.799) - (-.33192542)(-27.484) \\ &= 4801.570 \end{aligned}$$

For Court Referrals

$$\begin{aligned} 29.183 &- (-.00062517)(77.487) - (.00314158)(3.819) \\ &- (.00562926)(41.267) - (.13305964)(10.294) \\ &= 27.521 \end{aligned}$$

APPENDIX E

COMPUTATION OF SUM OF SQUARES FOR  
REGRESSION

## APPENDIX E

### COMPUTATION OF SUM OF SQUARES FOR REGRESSION

For Half Days Present

$$\begin{aligned} &= (.40066846)(73543.321) + (.63996280)(7940.396) + (-.17175540) \\ &\quad (-1215.623) + (-6.09497740)(550.547) \\ &= 38112.409 \end{aligned}$$

For Grade Point Average

$$\begin{aligned} &= (.01271637)(725.799) + (.46929689)(2575.006) \\ &\quad + (-.00811520)(-265.296) + (-.21478974)(-31.088) \\ &= 1309.527 \end{aligned}$$

For School Offenses

$$\begin{aligned} &= (-.00118852)(-146.811) + (-.01880701)(-211.943) \\ &\quad + (.23990418)(1971.340) + (-.29238543)(-21.792) \\ &= 483.465 \end{aligned}$$

For Court Referrals

$$\begin{aligned} &= (-.00067068)(-87.931) + (.00304776)(1.654) \\ &\quad + (.00674364)(53.258) + (.13820212)(10.843) \\ &= 1.922 \end{aligned}$$

APPENDIX F

ADJUSTMENT OF CRITERION MEANS

# APPENDIX F

## ADJUSTMENT OF CRITERION MEANS

Criterion  $\bar{Y}_{1e}$  - Adjusting the Experimental Group Criterion Mean for Half Days Present.

Sample Calculation:

$$\text{Adjusted } \bar{Y}_{1e} = (\bar{X}_{1e} - \bar{X}_{1t}) a_1 + (\bar{X}_{2e} - \bar{X}_{2t}) a_2 + (\bar{X}_{3e} - \bar{X}_{3t}) a_3 + (\bar{X}_{4e} - \bar{X}_{4t}) a_4$$

$$\begin{array}{r} 320.640 \\ -321.805 \\ \hline -1.165 \\ \hline .40053739 \\ - .467 \end{array}$$

$$\begin{array}{r} 17.733 \\ -17.975 \\ \hline .242 \\ \hline .63968737 \\ - .155 \end{array}$$

$$\begin{array}{r} 7.520 \\ -6.182 \\ \hline 1.338 \\ - .16856715 \\ \hline - .226 \end{array}$$

$$\begin{array}{r} .413 \\ -.352 \\ \hline .061 \\ -6.08009660 \\ \hline - .371 \end{array}$$

$$\text{Adjustment Value} = -1.219$$

$$\bar{Y}_{1e} - (\text{Adjustment value}) = \text{Adjusted } \bar{Y}_{1e}$$

$$314.493 - (-1.219) = 315.712$$

By means of the procedure shown in the above Sample Calculation, all criterion means for the experimental and control groups were adjusted. These adjusted values are shown below.

$$\bar{Y}_{1e} = 315.712$$

$$\bar{Y}_{1c} = 315.976$$

$$\bar{Y}_{2e} = 19.999$$

$$\bar{Y}_{2c} = 16.684$$

$$\bar{Y}_{3e} = 4.624$$

$$\bar{Y}_{3c} = 3.943$$

$$\bar{Y}_{4e} = .211$$

$$\bar{Y}_{4c} = .121$$