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ABSTRACT

A Comprehensive Career Guidance System (CCGS) for programs of individualized education where computer support facilities are available is described. The CCGS program employs a systematic approach to develop and evaluate guidance-oriented objectives and related instructional and counseling experiences for youth. This systematic approach involves 5 types of activities: (1) identification of youth development needs; (2) classification of objectives by commonalities and priorities; (3) specification and selection of all possible alternative strategies for individualized programs; (4) design, scheduling, and implementation of selected strategies; and (5) evaluation and feedback of the efficiency and effectiveness of designed programs. The authors suggest that the ultimate aim of this program is to provide a comprehensive data bank of behavioral objectives, each keyed to a variety of appropriate instructional, counseling, and evaluational materials and procedures available for student, parent, counselor, and teacher use. (Author/RK)

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Basic Studies Branch

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DEVELOPMENT AND EVALUATION of a COMPREHENSIVE CAREER GUIDANCE SYSTEM

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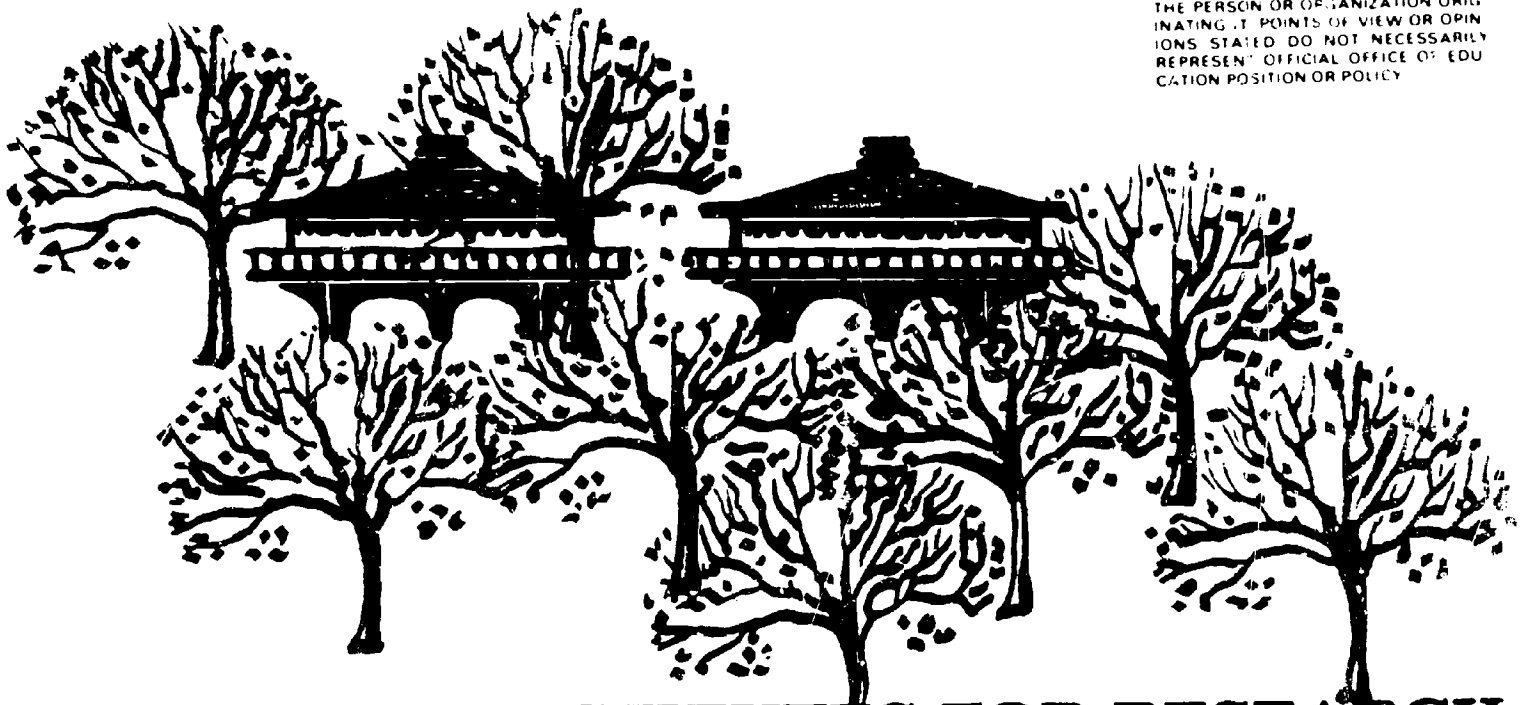

AMERICAN INSTITUTES FOR RESEARCH
Post Office Box 1113 / Palo Alto, California 94302

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U. S. Department of

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As we worked on this project, we attempted to coordinate our research and development activities with the experiences and products of groups such as the Project PLAN staff of Westinghouse Learning Corporation, the Guidance and Individual Planning staff of the American Institutes for Research, and Drs. Stan Ostrom and Dale Burklund at the Santa Clara County Office of Education. The cooperation and assistance we received from groups and individuals such as these and ones listed above enabled us to believe that this project's procedures and resources would continue to have a definitive impact on youth career development programs long after this project terminated.

AN OVERVIEW OF THIS DOCUMENT

This report describes a Comprehensive Career Guidance System (CCGS) for programs of individualized education where computer support facilities are available. The CCGS employs a systematic approach to develop and to evaluate guidance-oriented objectives and related instructional and counseling experiences for youth. The ultimate aim is a comprehensive data bank of behavioral objectives, each keyed to a variety of appropriate instructional, counseling, and evaluational materials and procedures available for student, parent, counselor, and teacher use. With such a bank, guidance personnel should be better able to individualize guidance services and, hopefully, help education in general adjust to the separate needs of each student. It is predicted that during the 1970's, as public and private schools move more and more in the direction of individualized education, greater emphasis will have to be placed upon individualizing youth development and career (i.e., life) planning assistance.

The systematic approach used in the development and evaluation of objectives-based programs in the CCGS involved five types of activities:

1. Identification of youth development needs; translation of those into behavioral objectives which state desired youth outcomes.

2. Classification of objectives by commonalities and priorities which serve as guidelines for the design of guidance and counseling programs.

3. Specification of all possible alternative strategies which could be used in individualized instructional and counseling programs and bring about student attainment of previously specified objectives; selection of strategies which seem most appropriate for groups of related objectives and groups of youth who have similar learning characteristics.

4. Design, scheduling, and implementation of selected strategies by organizing instructional and counseling materials and procedures into individualized learning units.

5. Evaluation of the efficiency and effectiveness of such units in helping students achieve the desired terminal outcomes specified in each unit's behavioral objectives; corrective feedback to make modifications in products and procedures developed and used in previous activities.

In regard to the first two activities just outlined, one method for grouping youth needs and objectives is by areas of a person's life (i.e., total career). Preliminary investigation led to the identification of the following six content areas of youth needs:

Vocational. Behaviors related to exploring and making decisions concerning both opportunities in the world of work and personal characteristics related to such opportunities.

Educational. Behaviors required for exploring, making decisions concerning, and pursuing the amount and kind of education and training one wants during school and throughout the rest of life.

Personal-Social. Intrapersonal competencies needed to function effectively as an independent person and interpersonal behaviors needed in small group situations, including two-person relationships. Behaviors applicable to various settings including home and classroom.

Academic-Learning. Behaviors involved in handling varied learning tasks more effectively and efficiently. Learning how to learn in varied settings, not just in the formal classroom.

Citizenship. Behaviors differentiated from those in the social behavior area because they are appropriate to secondary (e.g., government) rather than primary (e.g., family) social groups and systems.

Leisure. Behaviors connected with the exploration and utilization of leisure, cultural, and recreational pursuits.

Another method for classifying youth needs and objectives is on the basis of their common aims and purposes which cut across each of the preceding six content areas. The 12 components on the next page are believed to include all guidance and counseling functions related to youth needs. As indicated there, the 12 components are classified into two parts: direct interventions, learning activities employed directly with youth; and indirect interventions implemented around youth on their behalf. To date, the major focus of the CCGS has been on direct interventions.

The third activity in the systematic approach to the development and evaluation of CCGS programs involves the exploration and selection of suitable learning experiences for youth and their parents. For the direct intervention CCGS components, the ultimate desired outcome of this activity is an exhaustive catalog of empirically validated instructional and counseling strategies cross-indexed with: (a) type of youth need and problem (i.e., a need for which a youth desires assistance); (b) youth characteristics which have been demonstrated to be associated with the effectiveness of a strategy; (c) situational conditions under which an effective strategy is employed; and (d) characteristics of the individual(s) administering a strategy. Because of the varied and ever changing nature of youth characteristics and needs, it is acknowledged that the variety of strategies investigated for possible incorporation into this catalog will have to extend well beyond that considered in this document. In addition, continued advances must be made in the specification and improvement of decision rules for the selection of strategies from this catalog.

Individualized learning units have been designed to present learning opportunities to youth and their parents through selected instructional and counseling strategies (the fourth activity in the design and evaluation of a CCGS). Each unit contains: statements of measurable objectives expressed in terms of desired youth outcomes; suggestions of materials and resources each

youth might use and procedures he might follow in order to achieve each objective; and references to an evaluation procedure or instrument which will help each youth determine whether or not he has met each objective. Units, such as those illustrated throughout this document, have the advantage that they can be used either in separate guidance classes, individual counseling sessions, group counseling or guidance experiences, or can be integrated with other instructional materials and procedures in the conventional curriculum areas. In order to organize units into programs for each CCGS direct intervention component, a central theme of "each student as a problem solver" has been employed. That is, each program attempts to help youth apply problem-solving skills to formulate and to pursue personal goals and plans in each of the six areas of behaviors. The following diagram briefly illustrates the personal problem-solving skills around which all CCGS instructional-counseling (i.e., direct intervention) experiences have been organized. Each skill outlined has been defined in terms of more detailed student behaviors described in this report.

SUMMARY OF PERSONAL PROBLEM-SOLVING SKILLS

Planning Emphasis:	Perceiving and defining problem
	Gathering and evaluating information
Decision Making Emphasis:	Considering multiple alternatives and their related consequences
	Selecting alternate solutions and plans
Implementing/Managing Emphasis:	Implementing plans
	Analyzing product/process

The fifth activity in the systematic design and improvement of CCGS components involves evaluation, feedback, and correction tasks leading to the validation of successful strategies, improvement of partially successful strategies, and development of more appropriate ones. This activity necessitates the development of tests and performance standards for measuring youth attainment of objectives (i.e., anticipated learning effects). To assist in the evaluation of CCGS direct intervention program outcomes, two major types of instruments have been used: (1) guidance proficiency tests (i.e., end-of-unit tests focusing on knowledge, attitudinal, and overt behavioral outcomes) and (2) guidance survey tests assessing achievement and attitudes across three or four units or across complete programs. Attempts also have been made to employ experimentally controlled studies to evaluate the effects of CCGS programs, assessments of youth, parent, and school personnel reactions to guidance units, and informal studies of programs' unanticipated side effects.

Concepts and assumptions briefly summarized in this overview are discussed in more detail in the first three chapters of this document. The next seven chapters describe development and evaluation progress which has been made in the seven components involving direct interventions with students and parents. These are the components which have received almost all of the attention during

this project. At the end of each of these chapters is a list of available materials and programs related to the component of youth needs discussed in the chapter. The final chapter outlines the nature and possible content of the last five CCGS components involving indirect interventions. Emphasized there are future research and development activities which should be initiated. Brief summaries of the content of all chapters are contained on the next three pages. Those readers who prefer a more detailed table of contents are referred to Attachment A.

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CHAPTER 2

ALTERNATIVE FOUNDATIONS FOR GUIDANCE THEORY AND PROGRAMS

Until recently, the guidance movement has not been severely criticized in educational contexts. Now, guidance personnel and services are suffering more than most other educators and educational programs when bond issues fail, when cutbacks are made, and when the appropriation of money on the basis of documented program effectiveness in meeting specific objectives are discussed. If these criticisms are going to be objectively considered in an attempt to improve guidance programs, it now becomes necessary, more than ever before, to explore alternative foundations upon which guidance programs have been and can be designed and implemented.

Intuition, whether as a gradually developing feeling or a flash of insight, has been one basis for many guidance decisions. The cost of learning that intuition is fallible often runs high. Similarly, trial and error as a modus operandi can be both costly and inefficient. Though guidance is a youthful movement, tradition--a third alternative--has had a highly significant impact on guidance programs. As Zaccaria (1969) points out

> . . . tradition can be one of the most reasoning bases for the work of the counselor. There is comfort and security in doing what has been done for a long period of time. [Traditions] . . . must be correct, for they have been done so many times, by so many people, for such a long period of time (p. 4).

However, tradition can contain both the accumulated wisdom and fallacies of the ages. Closely associated with tradition as a foundation for guidance programs is the appeal to authority. Authority is perhaps more difficult to evaluate than are the three bases just noted since this approach can assume considerable respectability and the power of academic sophistry, while not being challenged to present scientifically respectable support.

Undoubtedly recognizing the limitations involved in trusting upon intuition, trials and errors, tradition or humanistic and scientific authorities as the sole bases for planning guidance systems, Lloyd-Jones (1954) and Wrenn (1959) expressed the need for formulating a philosophy or theory of guidance. The recommended method for accomplishing this was to match up concepts found in guidance practice with those of a philosophical school of thought. However, Beck (1963) asserted that such combinations would be made predominantly with semantic data, that is spoken and written concepts, which while appearing to be similar might well be quite divergent in meaning and implications when more thoroughly examined. The alternative approach he offered for studying the relationships of guidance and philosophy involved clarification and specification of the presuppositions or assumptions of a particular guidance approach and a similar examination of the presuppositions of schools of philosophical thought in order to obtain a "best fit" relationship. A primary problem with Beck's

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There seems to be a widely held view that at present there exists no real theories of guidance. In fact, Warren (1969) noted that very few authors in this field even lay claim to a consistent or systematic framework. Even the same authors of guidance models and programs (e.g., Tiedeman and Field, 1962; Wrenn, 1962; Mitchell and Weigensin, 1964) might disagree from that view, as Zaccaria (1969) the available candidates for a representative guidance theory, seem "too fragmentary, too poorly articulated and too deficient in depth and scope (p. 63)." Perhaps such candidates are the theoretical beginnings which ultimately will evolve into comprehensive alternative theories or will delimit themselves as microtheories which attempt explanations and descriptions of very limited classes of phenomena. However, at this current phase of their development, the term "approaches" used by several writers seems to be a more appropriate label for classifying these candidates.

Survey of General Guidance Approaches

This section will briefly present recent descriptions of guidance approaches which have been summarized by reviewers such as Barry and Wolf (1957) and Zaccaria (1969). Each description will be followed by a commentary which will introduce concepts basic to the rationale and assumptions of the guidance system and programs discussed in subsequent chapters of this report.

Guidance: A General Process in Education

In this approach the teacher is the predominant guidance worker. The roles of counselors and other specialized personnel are minimized, and the curriculum serves as the vehicle for accomplishing the objectives of guidance. General guidance is provided all children as they move through the classroom experience and it is assumed that this will be sufficient help for most of them. Those who have special problems are singled out for diagnosis and treatment by specialized personnel, usually from outside the school.

While this emphasis upon the commonality of goals and objectives of education and guidance is indeed desirable, as is the attempt to integrate guidance directly into the ongoing process of education, several limitations are apparent in this approach. Although it is true that the teacher has more contact with the student, amount of contact and quality of guidance provided might be unrelated or even negatively correlated, therefore suggesting that the desirability of placing guidance functions in his hands should be investigated. Secondly, it is unfortunate that the assumption is made that most young people will develop adequately with minimal assistance and only the few deviants will need special attention.

Guidance: Perparing Students for Their Educational-Vocational Futures

The vocational approach to guidance is a more apt term for this category since most advocates of this approach assume that the central purpose of education is to prepare youth for work. Choosing an appropriate occupation is the

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Critics of this approach have asserted that at its best the manipulative that it does not sufficiently help the individual to make his own decisions and choices. A further criticism has been levelled against its narrow focus which consistently views the individual as a future worker and seems to ignore other areas of life in which he must function effectively.

Guidance: Remediating Youth Problems and Aiding Personal Adjustment

Rather than attempting to provide service to all students, this approach defines the populations with which it will deal, in general, those students who deviate in some way. Here, the function of guidance workers is to help students with problems and crises of adjustment as these arise in daily life. A basic assumption of this mental health oriented approach is that the individual is not capable of resolving the difficulties he faces from time to time and only a professionally trained person can accurately understand his problem and help him to define and to remediate it. Depending upon the particular guidance program being implemented within this approach, youth problems may be viewed either as problems which are bothersome to the institution or society in general, or are barriers to the individual's progress.

One of the real strengths of this approach is its concern with objective data to support the definition of a personal problem and to evaluate the remediation of that problem. However, the goals of remediations are at times as vague as are the psychometric profiles used to describe the individual involved. In addition, this approach has been criticized because it often does not concentrate on helping the individual become a self-sufficient problem solver and seems to anticipate that the student will be back for treatment when another difficulty arises which he cannot handle. In this approach, problem prevention does not seem to receive the attention which many persons believe it should be accorded.

Guidance: Providing Specialized Services

This guidance approach maximizes the roles of various specialized personnel more than does any other. Here a division of labor based on differential training and functioning is attempted in a setting in which the various services correspond to aspects of the student's development and stress the belief that since the student has many different needs, each cluster of needs demands specialized assistance such as: a) individual assessment, b) information provision, c) counseling, and d) research and evaluation. Under the most recent concepts of pupil personnel services, such areas as pupil accounting and attendance, special education, and health services have been added to this list. The team of specialists responding to the diverse clusters of students' needs might include not only counselors, but school psychologists, school social workers, psychometrists, attendance officers, and the like.

Without question, there are strong points to this approach. The concern with individual needs and for looking at each youth as a unique person complements concepts of individualization in education. However, the plethora of specialists can also lead to a fragmented perception of the student. While this approach is a step toward a thoughtful analysis of guidance into functionally meaningful and clearly related components, in the present form it can create coordination, communication and supervision problems. The assumption that the many different kinds of specialists really desire, or are able, to function in close cooperation to serve students may be unwarranted.

Guidance: A Developmental Process

The concepts of human problem prevention, longitudinal growth processes, and the release of the human potentialities are hallmarks of the developmental guidance approach. It purports to depart from the so-called crisis orientation of some of the guidance categories just discussed, and aims at giving assistance to all students beginning at a very young age (perhaps even prior school entrance) and continuing throughout the years of formal schooling. Research on the early identification of potential problems in children has made its mark upon developmental guidance. Here, program emphasis is directed toward various specific aspects of an individual's development and moderate reliance is placed on specialists. All school staff members from administrator to custodian are viewed as guidance personnel with the teacher and counselor as the core individuals responsible for implementing guidance activities and programs. Since this approach is closely allied with developmental psychology in general, there are some indications that a full fledged theory might emerge from this association.

One of the unique and laudable assumptions of developmental guidance is that various aspects of education might in reality interfere with, rather than facilitate, pupil growth and development. Therefore, the approach declares that guidance has a major commitment to study the educational environment in order to eliminate these barriers. At other times, the specifics of this this approach seem far too vague and provide too little indication of both how it is to be operationally implemented and what the recommended courses of action should be in a given context. This approach does not emphasize clear interrelationships and roles of various guidance workers, but yet some of its assumptions infer more of a comprehensive program than could possibly be implemented by a school counselor. An additional criticism of this approach is that it rigidly focuses on a belief that human development typically proceeds through an ordered sequence of phases or stages. Because of the variability among subjects in the stages through which they pass and the tendency for stages to be rearranged in sequence or skipped entirely because of uncontrollable variables, consistent adherence to concepts derived from developmental psychology has been seriously questioned.

Guidance: The Application of Learning Theory and Research

Michael and Meyerson (1965) asserted that guidance involves the systematic application of knowledge derived from laboratory investigations of human learning phenomena. This knowledge pertains to accurate descriptions of behaviors and clear delineations of the circumstances which facilitate the acquisition, maintenance, or elimination of particular behaviors. They point out that genetic and heredity factors are not available for direct study and manipulation; therefore, observable behaviors of the organism must receive attention. A firm

grasp of such principles as classical conditioning, operant conditioning, and the shaping of behavior is important for persons attempting to clearly understand both the rationale and the implications of this approach. Rather than categorizing problems of clients, either by the locus of the problem or its content (e.g., vocational, educational), the concern in this approach is based on identifying those particular behaviors which need to be acquired, maintained, or eliminated and implementing procedures which promise to bring about the agreed-upon behavioral changes. Counselors using this approach become behavior assessors and modifiers. They must become aware of what techniques can be tried in order to bring about specific changes in student behaviors and then must consciously manipulate prevailing conditions in a sequence which is predicted to result in desired outcomes.

The prime arguments against this behavioral approach to guidance revolve around assertions that it treats students like animals in conditioning experiments and that it is unethical to manipulate the behavior of another person without his consent. The conviction has also been expressed that the approach is very limited in the range of personal problems with which it can deal. Extended refutations of these criticisms have been made. At the same time, its advantages, more numerous in quantity and more documentable than its criticisms, seem to cluster around the clarity of its conceptualization, its amenability to evaluation, its focus upon the clients it serves, and the solid research base on which its recommended guidance activities are based.

Relevance of These General Approaches

None of these approaches to guidance program development has been presented, or is recommended, as a comprehensive strategy based on an integrated theory of human behavior and the role of guidance services in assisting youth development in educational settings. Each approach has been briefly described in order to display some of the alternatives which were available for the consideration of this project's staff as it initiated this study aimed at developing, implementing, and evaluating major parts of a comprehensive guidance system. In pursuing a more comprehensive approach than that represented by any one of these aforementioned categories, this study's staff members seriously deliberated over the possibilities of combining some of the strengths of a number of the separated strategies, even though it was recognized that this attempt at eclecticism ran the risks of possible mediocrity and lack of internal consistency. Assumptions and subsequent statements of the rationale basic to the comprehensive guidance system outlined in Chapters II and II of this report substantiate the impact that some of these diverse guidance approaches had on the conceptualization of this study's guidance strategies. For example, a behavioral orientation focusing on research findings in the area of social learning theory plays an important role in this guidance system, as do the beliefs that there should be a strong developmental-problem prevention emphasis in addition to the provision of specialized programs and services to enable youth to resolve personal problems which inhibit their development. Also considered in the next chapter are the concepts that vocational guidance is an important part of a more comprehensive system of "life" or "career" guidance which in turn provides a fundamental, integrating process within the general context of education; a process which can help each student experience education as a personally relevant experience.

A Sample of Specific Guidance Approaches

The series of guidance categories just presented were described in general terms in order to summarize conceptual consistencies across the specific approaches grouped into each category. In this section four specific plans for guidance program design will be summarized in order to indicate that guidance professionals have delved into the program design problems more than what was inferred in the previous section.

Shaw and Tuel (1966) designed a model for a guidance program and declared that the "scope of responsibility" or target population for their program was the entire student population. "The earlier the better" seems to be their answer to the question about when guidance should be provided as is suggested by their statement that "decisions related to where guidance emphasis should be placed appear to be dictated more by history than by the potential effectiveness of such services (p. 825)." Other assumptions of their model support the provision of guidance for all children at the elementary level, the prevention of personal adjustment problems, and the focus of guidance efforts on the learning environment rather than on direct work with individual children. Shaw and Tuel, therefore, believe that guidance personnel should be trained so that they can function primarily with individuals and groups of individuals who affect student learning. In this way, these personnel will be able to give attention to the learning environment of pupils in order to help other school personnel to modify the environment wherever it is necessary for the enhancement of the learner. However, they do not outline any details of their guidance system nor do they indicate what student outcomes would possibly occur if their system were fully implemented. The closest they seem to get to such specification of objectives is that they stress that guidance must facilitate student development toward the fulfillment of the purposes and objectives of education in general.

Somewhat similar was a plan for guidance outlined by Danskin, Kennedy, and Friesen (1965). They document the possible effects of such factors as home, family, and peer relationships upon educational outcomes and propose that guidance workers study intensively the interaction between a student and the complete environment which might influence his academic learning. Their formulation is somewhat systematic in that student characteristics, school characteristics, student experiences in school, and graduate characteristics all are considered. Also, they propose a hierarchy of potency of influences upon students and suggest that guidance must "mobilize the most potent school forces to maximize growth (p. 133)."

However, the nature of this "growth" is not detailed except that the program offered to promote student growth is defined as revolving primarily around working with student groups. While the modification of outside environmental features before children enter school is rejected, as is the expenditure of the majority of guidance time intensively on a few students, no consideration is given to the modification of the outside environment during students' school years, nor to the use of individual counseling in combination with techniques in addition to group counseling. These program designers do not seem to believe that a variety of techniques are necessitated by variations in individual

student characteristics. The uniqueness of the Danskin, Kennedy and Friesen proposal is its contention that groups with which guidance personnel work should be naturally-formed peer groups, not ones which are artifically contrived for guidance purposes. As for specific guidelines for the guidance program, their proposal urges each counselor to take a stance giving emphasis to the developmental milieu in which the individual is born and to current conditions fostering development; to look for determinants of learning within the school; to communicate to other staff his frame of reference and relevant research, and to demonstrate his position by exhibiting genuine concern for, and interest in, staff and students.

Shoben (1962) viewed guidance workers as the potential leaders in facilitating individuals to live Socrates' "examined life." In such a life, "values are constantly being made articulate, subjected to criticism, and revised in the light of experience and thought (p. 436)." In fact, Shoben implies that the whole school should constitute a potent resource of character models exhibiting the characteristics of humane, rational individuals who act responsibly. Thus, a guidance program must serve both as a "human feedback mechanism" to let the staff know about the impact the school program makes upon the students and as a catalytic agent in clarifying the nature of the school and its contribution in terms of the presentation of desirable models. To carry out these functions, a guidance program must examine the educational setting as a culture which makes demands on, yet supports and encourages, student growth. The implication is clear that in some ways the instructional setting may not be promoting what it set out to elicit and to instill. The comprehensive guidance system to be outlined here should not cause Shoben dismay. However, described in subsequent sections of this paper will be an attempt both to operationally define one conception of the "examined life" and to provide specific suggestions for how students can be helped to achieve such a life. Shoben does not clarify such specifics.

Guidance was defined by Tiedeman and Field (1962, p. 483) as "the professional use of a science of purposeful action within a specific structure of education." They urged development of an operationally defined, powerful guidance program which would function not within conditions where students' goals already were selected for them, but in condition where it could help each student to choose his goals and subsequently to achieve them. They asserted that present guidance activities such as selecting, evaluating, and placing students reflect its status as a technology subservient to the process of instruction. A guidance program must be part of, not stand beside, education.

Tiedeman and Field's primary thesis--that the system's setting, purpose, theory, and techniques must be examined simultaneously--is one of extreme value for the development of guidance programs. The setting should indicate that instruction and guidance are to some degree different but must exist together in order to achieve a liberating education which is something that should be mutually pursued by teacher and student. As regards purpose, they suggested that "ends must come into existence before, or simultaneously with, means (p. 489)." The purposeful action which results then does not get entangled in an argument over teleology, but rather it is behavior based on a concept of some future state envisioned in the mind of student and guidance personnel. It is behavior intended to reduce the difference between the student's present state and that

[illegible] for that future state. "Thus purposeful means 'not random,' i.e., [illegible] achieve the currently desired by acting contingently upon the [illegible] observed (p. 489)." The theory and techniques for guidance then [illegible] directly from just how one brings about any increased probability [illegible] student's achieving the desired future states which he has helped [illegible] of Tiedeman and Field's conclusions is that the science which [illegible] guidance has yet to appear, and that when and if it does, it must [illegible] basic research in behavior change.

None of the descriptions of general and specific guidance program design [illegible] presented in this and the previous section pretends to propose the [illegible] of a guidance system within an individualized educational framework, [illegible] was the interest of this project's staff, nor can anyone of them be construed [illegible] addressing itself to all possible components in a comprehensive guidance [illegible] system. None of them involves specifying in detail the various parts of a [illegible] guidance program, relating these to identifiable student outcomes, and out-[illegible] criterion measures for assessing the efficacy of each of these parts. Most of these approaches dwell either in the realm of philosophical imperatives [illegible] opposed to specifying the setting in which a guidance system is to be [illegible] implemented or on the purpose, theory, or a specific technique of the system [illegible] be implemented.

Further, discussion of questions such as whether or not to have a guidance program modify students' behavior directly or indirectly (i.e., through [illegible] influencing school personnel who in turn modify student behavior) seems to be a waste of effort. Such discussion promotes futile conflict as exemplified by the needless separation of "instructional specialists" and "guidance specialists." In any guidance system which focuses on helping students achieve the objectives of the educational framework within which it functions, such a discussion can lead to a confusing and unnecessary division of purpose and labor. Also, it is difficult to believe that even in guidance programs which contain "guidance specialists" that these persons would refuse direct contacts with students who request assistance. In Chapter II an approach which seems more individualized to student needs will be stressed. This approach focuses on the identification of agreed-upon needs of a student and then scans the available alternatives for helping him satisfy his needs. Within different school settings, these alternatives will vary. Some of them might not even necessitate help from adults. Others which involve adult assistance will vary dependent upon the available staff, their skills, interests, and time constraints. Most school systems are a long way from efficiently using all available personnel and effectively matching adult (and even student) helper characteristics with the characteristics of students who need assistance. If a guidance system contains a large number of alternatives for facilitating student need satisfaction, its fidelity and efficacy should not be impeded when attempts are made to implement it within various school settings. The last section of this chapter describes the setting for which this project's guidance system was designed. Chapter II attempts to spell out both the basic constraints and assumptions underlying this guidance system, while Chapter III sets forth the paradigm of activities which should be involved in the detailed design and development of such a comprehensive guidance system.

Nature of the Educational Context for a Comprehensive Guidance System

To design a guidance system without studying the nature of the educational suprasystem (Silvern, 1965) within which it is to operate is tantamount to declaring that human behavior can be studied independently of the environmental conditions influencing it. The educational context for which a guidance system described in the remaining chapters of this report has been designed is similar to that described by Silberman and Carter (1965). They identify "the ideal school" as possessing these characteristics:

1. the objectives of this school are clearly specified and the school system is evaluated and modified to maximize the extent to which these objectives are achieved.

2. the school staff has an experimental orientation and modifies materials and procedures to successively approximate the objectives.

3. a highly competent research staff consisting of a variety of content experts and behavioral scientists work together to produce a well integrated curriculum to fulfill the objectives.

4. they provide a steady pipeline of well tested materials and procedures for use by the teaching staff.

5. individualized instruction, based on new developments in media and classroom technology, is used to allow all students the opportunity to learn at a pace fitted to their individual abilities.

6. management problems are solved with use of computers, allowing ready access to student records, efficient and flexible scheduling, and optimal allocation of resources (pp. 26-27).

Flanagan's (1970a) description of Project PLAN (Program for Learning in Accordance with Needs), an individualized educational program currently being implemented in a number of school districts, suggests that Silberman and Carter's "ideal school" may not be merely a pipedream. He outlines these four of Project PLAN's components:

1. a comprehensive set of educational objectives.

2. the teaching-learning unit which helps direct students to instructional materials and processes appropriate to their objectives.

3. a set of tests which indicates extent of mastery of objectives.

4. the evaluations and systems centralized around an IBM 360 Model computer.

Included as a fifth component in the PLAN system of individualized instruction is a set of procedures related to guidance and individual planning for each student. This component, although not discussed by Silberman and Carter, is

considered by Morgan and Bushnell (1966) in their proposal for designing an organic curriculum in a program of individualized education similar to that described by Flanagan.

Except for this one component, all these writers apparently are describing compatible educational systems which deviate astoundingly from the systems which are operational in most schools today. No attempt will be made in this project report to describe present educational conditions or to design a guidance system which will fit those conditions. This report is predicated on the belief that the educational suprasystem of the 70's will be an individualized educational system similar to those outlined by Flanagan and Morgan and Bushnell. The purpose of this document is to outline the design of a guidance system which will be an integral, meaningful, and adaptable part of that type of educational suprasystem.

Silvern's (1965) description of systems analysis in education and training postulates that an educational suprasystem covering kindergarten through secondary academic levels must be composed of systems such as those indicated above (i.e., instructional objectives, instructional methods and materials, evaluational measures and procedures, and managment including the possibility of computer assistance). The most important system to be included, one on which all the others must focus their efforts, is that of the student. This focus on the student "not only reflects the dignity of man in society, but also reflects the doctrine of democracy and the inherent worth of the human being (Silvern, 1965, p. 23)." This focus is further defined by the rationale and assumptions presented in the next chapter.

CHAPTER II

RATIONALE BASIC TO A COMPUTER-SUPPORTED COMPREHENSIVE CAREER SYSTEM FOR INDIVIDUALIZED GUIDANCE AND COUNSELING

The general purpose of the next two chapters is to present the rationale underlying this project's attempts to individualize and to evaluate school *guidance*[1] and *counseling programs*. To accomplish this purpose, the discussion will focus on concepts and techniques which were systematically applied in the developmental and evaluational activities of the project reported here and which will be used in subsequent field tests and adaptations into ongoing school services. The achievement of an even more basic purpose of these chapters would result in the reader being able to identify and to explain that the success of these and any similar applications are dependent upon: accurate and comprehensive assessment of students' guidance-related *needs*, clear delineation of meaningful behavioral *objectives* derived from the assessment data, and individualization of strategies and programs to guide youth's progress.

Behavioral Outcomes of Guidance and Counseling Programs

Principles of fiscal accountability and cost effectiveness are achieving wide notice in educational circles. For example, the California legislature has issued a declaration of intent that all school districts should adopt and utilize a program-managing and budgeting approach beginning with the 1972-73 school year. If this process of management by objectives is fully adopted, state support to education will be allocated on the basis of how well each educational program meets its stated objectives. Guidance and counseling programs comprising one of the important subsystems within schools will not be exempt from such scrutiny. Evidence that students are benefitting from objectives-based programs will do much in the future to insure that the guidance subsystem activities receive adequate legislative and financial support.

With specific objectives operationalized in terms of student overt behaviors, attitudes, knowledge and skills, pupil personnel workers should be able to explain clearly to students, parents, and the general public specifically how guidance, instructional and counseling procedures can contribute to, and are influencing, student progress. Student and parent acceptance of such procedures should increase as students use objectives which inform them of the purpose of guidance-related learning activities and as they understand, what should be, the close relationship between guidance and the other educational subsystems. As the integration of guidance and basic curriculum areas is clarified and strengthened, such objectives should enable youth to review mile-stones in their educational progress and to demonstrate greater commitment to their career development.

The central aim of the guidance and counseling programs introduced in these two chapters and outlined in more detail in subsequent chapters is to assist each student and his parents:

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[1] Words italicized and underlined throughout Chapters II and III are defined in the Glossary at the end of Chapter III.

(1) to *formulate* his immediate and more long-range career goals;
(2) to specify the guidance-related and other subject matter-oriented instructional objectives through which he should proceed in order to achieve these goals;
(3) to develop and to pursue *plans* including programs of study for achieving these objectives and goals; and
(4) to assess his progress toward attaining these objectives and goals.

Guidance professionals have begun to realize the mammoth effort needed to develop behaviorally specific, student-oriented objectives and to use these as guidelines for systematically planning, implementing and evaluating school guidance and counseling programs. As difficult as the process is of identifying and specifying objectives within conventionally defined curricular areas (e.g., mathematics, social studies, etc.), it seems infinitely more difficult in the relatively uncharted areas of guidance where previous attempts have been unsystematic and abbreviated, thus providing a limited background or base on which guidance workers can build. Even in the few attempts that have been made, only a small number of guidance and counseling advocates (cf. Krumboltz, 1966a, 1966b; McDaniel, 1970; O'Hare, 1969; Wellman, 1967) have stressed the necessity of relating guidance objectives to behavioral *student outcomes* which specify what students will be able to do as a result of guidance and counseling learning activities. Often, guidance objectives emphasize variables which do not permit program development or evaluation in terms of student competencies. Examples of such objectives include ones addressed to the general characteristics or aims of guidance services (e.g., to provide student-counselor ratios not exceeding 350:1, to establish a library of educational and occupational literature; to schedule one qualified school psychologist for three elementary schools) or courses of study (e.g., to require that each graduate have completed a course on occupations; to help students to learn about interpersonal relationships).

Advances must be made toward implementing needs-assessment-based and behavioral-objectives-regulated approaches in the guidance field. In addressing itself to this area of need, this project used a systematic approach to assess youth guidance-related needs, to draft youth-oriented objectives and then to develop and evaluate related instructional and evaluational experiences for youth and parent guidance and counseling. These attempts have been incorporated into the design of a Comprehensive Career Guidance System (CCGS) for programs of individualized education where computer-support facilities are available.

It is possible, as has been suggested by many critics, that certain forms of youth development, (e.g., intense feelings, appreciations, creative responses) will be impossible to operationalize through the identification of behavioral objectives. However, this still leaves a vast domain of potential youth programs in which much progress can be made through systematic analysis aimed at formulating meaningful objectives. More explicit applications of the concepts of systematic planning and decision making are necessary as are strategies of training counseling personnel in the use of more systematic approaches to guidance and counseling program development and evaluation. If attention is not given to some type of pre-service and in-service training for pupil personnel workers, the guidance subsystem will continue to lag far behind signficant advances that conventional curriculum areas and general educational administration have made in bringing systems strategies to bear on problems occurring in educational institutions.

Presented in the next section of this chapter are some of the basic assumptions underlying this project's approach to individualizing guidance and counseling activities. Chapter III describes a set of procedures for deriving a guidance system from these assumptions.

Assumptions Basic to the Comprehensive Career Guidance System

Assumption #1

> *Guidance and counseling programs must take the major responsibility in the educational system for helping to develop and to protect the individuality of students. To meet this assumption, these programs must provide students and parents with individualized assistance so that each student will be able to become aware of his needs, to formulate and to pursue immediate and long-range personal goals, together with related plans for achieving these goals, in a number of life areas of activity.*

An immediate response of most readers to this assumption probably is: "Of course!" However, too many school guidance services seem to be based upon assumptions and operate for purposes completely incompatible with this statement. Instead of protecting and fostering the development of each student's individuality, many pupil personnel workers are required or choose to engage in activities which seem to ignore principles of individual differences. Examples of such activities include: registration and enrollment of students, development of class lists, compilation of teacher grades, performance of record keeping tasks, test administration to students with special learning problems in order that government program subsidies can be obtained, and administration of standardized tests--without any clear concept of the specific questions to which answers are being sought through testing, or without any procedures for consistently and clearly communicating the test results back to students and parents and for providing indications of just how these results might be used for the purposes of goal formulating and decision making. Perhaps the best examples of the defiance of Assumption #1 are to be found where large group lock-step instructional procedures are predominant and in situations where there is an absence of pupil personnel workers whose primary mission is to serve as individuals who, while identified with and working as part of the educational superstructure, are advocates for the legitimate concerns of youth and who are dedicated to insuring that the needs of youth are receiving attention.

At the same time, a comprehensive guidance system must not have goals which are separate and distinct from those of the educational framework within which it functions. Its existence must be justified on the basis of its ability to assist in carrying out the goals of education. As indicated by Wellman (1968) in the preliminary reports of the National Study of Guidance, it must be shown that when guidance is assisting in the educational process a larger percentage

of students attain the desirable goals which education espouses than reach these goals when guidance is absent. The purposes of education--such as to transmit knowledge and skills, to prepare learners to actively and effectively appropriate new knowledge and skills, and to enable them to apply these skills to practical problems, including new learning situations--must be shared and facilitated by guidance. In a democratic society a guidance system must exist, as must the total educational framework itself,

> to make man free. Free to choose and decide for himself. Free to develop whatever talents he has to their highest degree of productivity. Free to try--even when the chances for success are poor (Hoyt, 1968, p. 15).

The joint ACES-ASCA (Association for Counselor Education and Supervision-American School Counselor Association) policy statement (Malcolm and Hays, 1968) for superintendents of schools and school boards concerned with the role of the school counselor indicated an interest in seeing counselors fulfill the responsibility of developing and protecting student individuality. This statement outlined at least three ways counselors should meet this expectation. They should help each student:

1. increasingly to assume responsibility for his own learning;
2. with both short-term and long-term decision making and planning in order to promote the more efficient learning that results from goal-oriented behavior; and
3. to be reasonably free from, or able to control, distracting needs and problems.

It is a basic premise of this report that these expectations are ones which must be met by all aspects of a comprehensive guidance system, not just by the counselors who function within it. Such responsibilities must be shared by more than a guidance system. That all educational practice, not just a guidance system, should focus on the needs of each student has recently been noted by Hoyt (1968) in a testimony before the House General Subcommittee on Education. He stated that

> the belief that society will benefit most if primary emphasis in education is placed on individual rather than societal goals underlies both the philosophy and the operation of public education (Hoyt, 1968, p. 15).

Possible procedures for, and implications of, placing emphasis on individual goals in education are the topics of concern in later sections of this report. In summary, Assumption #1 is predicated on the belief that students' most efficient and personally satisfying learning and development results from goal-directed behavior. Therefore, the main purpose of a comprehensive guidance system must be to help youth assess their multi-potentialities and limitations, to discover their needs, to formulate their goals and related objectives, and to work toward realization of these goals with increasing ability to constructively manage their own behaviors.

[illegible]

This is another apparently trite assumption since most lists of aims for education contain at least one statement which implies that students need to receive training for decision making and problem solving. Yet in practice, most students receive training in the scientific method as applied to science problems but are not provided with techniques and methods with which to confront their personal problems and are not permitted to make reasonably important, or even in many cases minute, decisions about personal or social problems within the school setting. In other instances, students might receive considerable training in science but none in the application of problem-solving strategies related to crises and conflicts arising from human interaction; yet they are given opportunities to make decisions about substantial issues in the school setting. In neither case are the schools training youth for "educated involvment" in decision making and planning.

Assumption #2 predicts that students can learn to apply principles, which are in some cases similar to those used in the scientific method, in order to resolve personal and social problems successfully. Support of this assumption suggests that in addition to helping youth acquire basic information and problem-solving skills which are necessary ingredients for human problem-solving activities, schools must give them opportunities to make and accept responsibility for relevant and meaningful decisions. This assumption is predicated on beliefs that youth are capable of gradually assuming more and more responsibility for the issues which affect them and that choices in most contexts are not completely determined by external factors--i.e., that individuals can and do exert some control over their environment. If human decision making were completely determined by factors external to the individual:

> then choice would be either irrelevant or superfluous. Furthermore, in order to create information on which to base decisions, one must *actively* process data rather than passively be guided by them, and therefore, the individual must become a significant agent in the choice process . . . the individual is *responsible* for his decisions in both meanings of the word: he is the one who makes the decisions, not someone or something external to him; he is the one who enjoys or suffers the consequences. This is one way to define "freedom" . . . (Ellis and Wetherell, 1966, p. 1).

Assumption #3

Guidance and counseling programs must be based on students' needs and must serve all career-related needs of all students at each academic level; not just the needs of a selected group of students. Immediate as well as long-range needs must receive attention as must career needs in areas of behavior other than those involved in educational and vocational choice.

To label all guidance programs as "vocational" limits the comprehensiveness of a guidance system and connotes the conception of guidance as a process for making man-job matches. To avoid any such restrictions, the label "career guidance" (cf. Katz, 1968; Lewis, 1968) has been adopted here. For Katz, the word "career" incorporates all possible patterns of choice at any given point in time and refers to the totality of life style. For persons who restrict the word career to educational and vocational endeavors, the term "life guidance" might be more palatable. Another aspect of Assumption #3 necessitates that all students have access to guidance and counseling services. To group students in a category with a distinctive label and to restrict guidance and counseling efforts to them does not obviate the needs of other students for these or similar services (Wrenn, 1962). It is impossible to build a case ethically for serving only a segment of the student population (Shaw and Tuel, 1966). The lack of long-range, developmental guidance programs which provide all students with sequential learning experiences has been documented by Strowig and Farwell (1966); however, the need for guidance programs which are well thought out and coordinated across academic levels had earlier been reflected repeatedly in theory and research (e.g., Super, 1957; Flanagan, 1962; Havighurst, 1965).

In one of his strong recommendations to members of the counseling profession, Wrenn (1962) reflected support for both of the aspects of Assumption #3 by suggesting:

> that primary emphasis in counseling students be placed on the developmental needs and decision points in the lives of the total range of students rather than the remedial needs and crisis points in the lives of a few students, with the major goal of counseling being that of increased self-responsibility and an increased maturity of decision making upon the part of the student (p. 109).

Assumption #4

Guidance and counseling objectives and procedures must be integrated into the basic instructional process of the school in order to help each student and his parents to recognize the relevance of the instructional program to youth career development by selecting and utilizing a unique set of instructional objectives related to his career goals.

In the same way that many attempts to individualize education are correlating and integrating student performance objectives across subject matter lines, continued effort must be made to bring the guidance system back into the mainstream of the instructional process. There are "separatists" who seem to take pride in believing that guidance and counseling have something so distinctive and different to offer youth that in order for these programs to make a successful impact, they must be treated as entities separate from other educational subsystems. Usually it is impossible to get such people to operationalize, in terms of meaningfully communicable student outcomes, just what influence their programs can have in the total educational process. The possible loss of identity inherent in Assumption #4 seems to be very threatening for such people.

This is not the first place in which it has been proposed that guidance and counseling programs be designed as integral portions of the total instructional process. As noted in Chapter I, Flanagan (1970a) envisioned such a synthesis from the beginning phase of development in Project PLAN, an attempt to individualize education on a nationwide scale. Such a recommendation also would seem to be a natural implication of Sorenson's (1967) exposition of "an instructional model for counseling." He believes that a counselor's:

> goals and his methods are intellectual in the sense that they have to do with teaching students problem-solving skills--how to gather and analyze information in order to make predictions about the outcomes of alternative courses of action in problem situations. Both his goals and his methods can and should be described in behavioral terms (p. 10). . . it would seem to be useful to think of counselees as persons who need to be taught certain heuristic rules, or in other words, taught to apply certain abstract principles in solving their personal problems. The people with whom a counselor works are in trouble because they don't know the proper principles or because they habitually use principles that are incorrect or self-defeating (p. 20).

However, Sorenson seems to have inadvertently omitted from this statement the process by which the counselee's goals influence the counseling process. The role of counselee's goals is central to the Krumboltz (1965, 1966a, 1966b) and Krumboltz and Thoresen (1969) treatises on behavioral counseling, additional references which seem to be compatible with Assumption #4 since they suggest a desirable procedure for tailoring school instructional activities more closely to the goals of youth.

Cooley and Hummel (1969) also seem supportive of this assumption when they culminate their review of system approaches to guidance and counseling by conjecturing that "a systematized guidance program *might* also be interrelated with other subsystems to form an educational system . . ." (italics ours). They conclude, however, that "(to) date, no attempt has been made to systematize all the guidance functions in an educational program . . . (pp. 253-254)." Elsewhere, Cooley, (1969) specifies one of the aspects he believes might be contained

in such a guidance program. Although his label of "guidance curriculum" is disagreeable since it opposes an organic curriculum approach, his concept of the nature of this guidance is more palatable: "principles involved in goal setting, planning towards goals, self direction, and decision making need to be taught. . . . The guidance curriculum must try to prepare the student to make more effective use of the counseling interview (p. 65)." There seems to be agreement from varied sources that there are students who have needs which can be met through guidance-related objectives and procedures injected into, and not dissimilar from, the central instructional process of education.

Assumption #5

> *A guidance system to be comprehensive must involve interventions directly with youth through both a developmental phase to maximize the prevention of problems, and a prescriptive phase to help youth alleviate those problems which persist. Indirect interventions in the environment around youth should not be neglected but should be integrated closely with knowledge about each young person and his progress, as such information is made available through the direct intervention phase of guidance from the assessment of youth needs and empirical data concerning those factors which either facilitate or impede student need reduction.*

Guidance and counseling programs must emphasize a core of continuous, sequential learning activities which facilitate development through direct interaction with the young person. This core would constitute the developmental phase of guidance; a secondary direct emphasis would be placed upon the prescriptive phase aimed at remediating specifiable problems of individuals or small groups of students. A comprehensive guidance system must place priority attention on facilitating student development as opposed to only remediating difficulties (Hoyt, 1968) or correcting specified problems. Elsewhere (Dykstra, Pritchett, and Ojemann, 1967) it has been suggested that part of such an emphasis necessitates the development of a positive mental health program which, as stipulated in Assumption #4, will exist as an integral part of the total instructional curriculum, not as an awkward addendum to it.

Indirect intervention services must be conducted as a youth advocacy or ombudsman operation in order to insure that the educational system and the settin (e.g., community, home) with which it should cooperate, foster rather than impede, or ignore, the development of each student's individuality and his movement toward goals he participated in selecting. A comprehensive guidance system must study the influence the learning environment has upon each student and must assist in making modifications wherever necessary. In fact, writers such as Shaw and Tuel (1966) infer that a guidance system's prime responsibility is this type of indirect intervention. In addition, guidance must be one of the key educational systems which will study the characteristics of community and society factors outside of the school since these influence the nature of student needs. Silvern capsulizes this constraint well when he states that he hopes that:

> INSTRUCTIONAL SYSTEMS include within them that part of the real life environment for which the learners are being prepared and from which feedback may be obtained to cause the curriculum parts of the SYSTEM to be modified to keep up with, or even ahead of, the needs of the real life environment (Silvern, 1965, p. 20).

If the guidance system is an integral, contributing part of the surrounding educational framework, it must adapt and help the educational suprasystem adapt to variables both part of, and external to, the school's environment.

Assumption #6

> *In order for a guidance system to be responsive to the individual differences of the youth served, the effectiveness of various instructional and counseling strategies for helping youth meet their needs must be experimentally investigated. The purpose of these investigations would be to determine the most appropriate matching of student and strategy under specifiable conditions.*

Humanistically oriented pupil personnel workers who are dedicated to relationship counseling often are single strategy advocates. In fact, some individual counseling devotees even seem to hesitate exploring the use of empirically validated group counseling techniques. Restrictions on educational budgets, concern over fiscal accountability, and the shortage of qualified counseling personnel suggest that viable alternatives for fulfilling the guidance needs of youth must be studied. Perhaps some activities carried on currently by counselors could be conducted just as effectively by other personnel, or even by personnel with less professional training. Perhaps many student problems might be alleviated prior to the initiation of one-to-one counseling or students could be more adequately prepared for this relationship so that the time devoted to it would be utilized more efficiently.

Lohnes (1969) spoke to the central issue behind Assumption #6 when, while addressing his comments to college career guidance systems, he pointed out that:

> Extensive guidance services for a majority of college students can only be accomplished by an auto-instructional system which minimizes counselor contacts. . . . (this) guidance system would give students an opportunity to turn to a counselor when and if a serious discontinuity occurred in self exploration and personal planning processes. When the student recognizes a need for assistance in bridging a discontinuity, the counselor would be available. . . . The implication of (a systems) approach is that we may err if we start out thinking "computer" just as we may err if we start out thinking "counselor." We should start out thinking "guidance needs" of our intended clients, hoping to encourage

creativity of means by deliberately holding means considerations in abeyance (pp. 17-18).

In this statement Lohnes reinforces both the needs assessment-based guidance concepts introduced in this chapter and discussed in more detail in Chapter III, as well as the demands of Assumption #6, which encourages guidance and counseling program developers to search for and experimentally investigate innovative alternatives to interpersonal counseling.

CHAPTER III

DERIVATION OF A COMPREHENSIVE CAREER GUIDANCE SYSTEM

The following activities facilitate the derivation of an individualized guidance and counseling system from the assumptions described in the preceding chapter. Though no strict stage or step model is intended by what is presented below, there is a tendency for these clusters of activities to flow logically from one to the other when sufficient time for exploration and refinement exist. However, due to a model of a cybernetic loop which has been incorporated into the systematic approach outlined by these activities, the resultant process takes on a cyclical character which is one of continual modification of earlier guidance system activities as information feedback is made available through ongoing activities. Each activity listed below receives detailed attention in subsequent sections of this chapter.

1. Identification of youth development needs and the translation of these into behavioral objectives which state desired youth outcomes.

2. Classification of objectives by commonalities and priorities which will serve as guidelines for the design of guidance and counseling programs.

3. Specification of alternative strategies which could be used in guidance and counseling programs designed to bring about student attainment of the objectives and selection of the strategies which seem most appropriate for particular groups of objectives or groups of students.

4. Design, scheduling and implementation of selected strategy or strategies through the organization of instructional and counseling materials and procedures into individualized guidance-related learning units.

5. Evaluation of the efficiency and effectiveness of such units in helping students achieve the desired terminal outcomes specified in each unit's behavioral objectives. This activity necessitates the development of tests and performance standards for measuring student attainment of objectives. It also provides corrective feedback information which can be used to make modifications in products and procedures developed and used in earlier activities of systems analysis and systems development.

A long-range benefit accruing from such activities will be the accumulation of a comprehensive bank of behavioral objectives, each of which is keyed to a variety of needs-assessment instruments, appropriate instructional-counseling units, and evaluational materials and procedures. After actual use of these units, it is anticipated that summary data on the positive and negative features of each unit will be available. This bank should be available for student and parent use in conjunction with counselors, teachers, or administrators. With it, guidance personnel should be better able to individualize guidance services to the separate needs and characteristics of each student and to avoid the typical fragmentation of diverse guidance and counseling techniques and procedures. Far too many innovative approaches have met with little long-range success because no attempt was made to fit them into a systematically planned guidance framework. A systems approach to guidance and counseling

programs stresses the development of a system as an "interdependent entity rather than as a conglomeration of parts or elements (Thoresen, 1969, p. 276)."

1. Identification of Youth Development Needs and Related Objectives

A comprehensive guidance system must define the various subpopulations comprising the total range of students, specify the desired terminal competencies of individual youths in these varied groups, identify the current status (entry level) of these competencies among the youth, and formulate meaningful needs' statements which: (a) describe the extent and nature of the discrepancies between these entry and terminal levels, and [2] can be translated into explicitly stated objectives for program developers, evaluators, and the target populations.

Concept of "Need"

The term "need" often is used ambiguously both in professional literature of the social and behavioral sciences and in descriptions of educational programs purporting to "meet student needs." Typically, the word is used to refer to intrapsychic traits or predispositions as is the case when references are made to such "psychological needs" as "emotional security," "personal identity," and "commitment" (Murphy 1969). Maslow's (1954, 1962) hierarchical conceptualization of psychological (e.g., self-actualization, esteem, belonging) and physiological needs is often used as a foundation for such references.

The difficulties involved in using this concept of psychological needs become immediately apparent to the developer of instructional or counseling programs designed and evaluated in terms of behavioral objectives. To operationally define a term like "emotional security" presents a serious problem (Krumboltz, 1966a, 1966b; Mischel, 1968). The developer must immediately ask: [1] What does an emotionally secure young person do (or feel, or know, or believe) that distinguishes him or her from an emotionally insecure person? [2] In a guidance system aimed at individualizing the educational process, is it meaningful to attempt to determine the characteristics common across all emotionally secure or insecure youth, when really we want to attend to the needs and characteristics of an individual youth, or, at most, to those of a small group of youth who have similar needs and characteristics?

To be useful in guidance system activities of needs assessment, program development, and program evaluation, the concept of need must be defined in terms of identifiable student understandings, attitudes, skills, and overt behaviors which can be subjected to empirical documentation through reliable and valid subjective or objective measurement procedures. The assessment of one of a youth's *personal need* necessitates measurement of his current status on a pertinent variable as well as a clear indication of the desired outcome level or status he wants, or persons assuming responsibility for his development want him, to achieve on this variable. Need satisfaction or reduction is synonymous with goal attainment or the achievement of an objective. As an example, a youth would have a need if he currently was able to converse fluently and without excessive tension with groups of two or three people but experienced debilitating tension if the group size exceeded that number. His goal is to speak more fluently and to decrease his anxiety in groups of more than three people. His need is the discrepancy between the current and desired levels of performance on this variable; the response to a particular type of social situation.

If a guidance system centers its operation on this definition of the concept of need, it probably will be most appropriately based in an individualized educational framework within which it will accentuate Tiedeman and Field's (1962) conception of "the professional use of a science of purposeful action" as it assists students to move toward the goals and objectives it has helped them to formulate.

Often a guidance and counseling program is designed and evaluated on the basis of an *institutional need* emphasizing desired improvements in staff qualifications, personnel activities, or departmental facilities and equipment. If these improvements are not defined both in terms of their potential impact on the current level of youth competencies and in terms of the desired level of competencies they are intended to help youth attain, they undermine Assumption #3 of an individualized guidance system. On the basis of this assumption, the key program concerns become: [1] What needs of youth are being met by this program; what desired outcomes is it helping students achieve? [2] How important are these needs compared to other youth needs on which such programs should concentrate?

Youth Involvement in Needs Identification

Many statements about the needs assessment process in education imply that it is conducted in spite of youth and that objectives derived from this process are imposed on them. It is not too difficult to find youth development programs inside and outside the school setting which are completely dictated by adults who firmly believe they know "where it's at" for the youth participants. This approach is incompatible with any youth development program which seeks to cultivate the potentialities of each individual student. This assertion is based on two beliefs: first, most youth possess some information about what their needs are and this information can be valuable for the individualization process; second, even if they cannot contribute much to needs assessment activities, young persons' dignity will be enhanced and their later cooperation will be more likely if they have been honestly permitted a role in these activities. Only when youth are knowledgeably involved in the assessment of their needs can progress be made toward individualization of educational processes.

The attempt made in the Glossary to differentiate between "instructional objectives" and "personal goals" suggests that it is possible for an educational system to have a comprehensive list of instructional objectives unrelated to the goals of the youth it attempts to serve. Only when youths are assisted to formulate their career goals wisely, to assess their current status relevant to these goals, and then to progress toward these goals is it possible to attain *individualized education* of the type discussed by educators such as Flanagan (1970a) and Morgan Bushnell (1966). As more and more public and private schools move toward individualized education during the 1970's, continued emphasis will have to be placed upon individualizing *student goal formulating* and *planning* so that progress can be made beyond *individualized instruction* and into meaningful individualized education. If educators have broad aims such as to assist students to take responsibility for their academic progress and total career development, it seems strategically desirable first to help students to acquire the information and skills necessary for their goal formulation and then to aid them to take a leadership role in the actual setting of their goals as soon as

they are capable. The recommended procedure is not one of asking students "What are your needs?" or even "What are your goals?" It is a procedure of assisting them to apply a problem-solving approach to their goal formulation and involving them in identifying both their current competencies and ones they desire in order to perform specifiable career roles. When youths' goals make explicit the terminal outcomes they desire, a major step in the needs' assessment process has been taken. Adult expertise should not be deemphasized. Rather, a partnership of student and adult in promoting a profitable educational enterprise is recommended.

A distinction needs to be made at this point between the concepts of "personal need" and "*personal problem*." They are not synonymous. The latter denotes a commitment to change, a dimension not included in the former. Once a statement has been made regarding a youth need (ie., the discrepancy between a student's current status and that status which is required by one of his goals), the next question should be: Does the youth experiencing that need want to do anything about it? If not, it cannot be designated as a "personal problem" for it is not something the individual wishes to resolve. His need might indeed be interpreted as a problem but it is a problem experienced by those around the individual. In school settings, the problem belongs most likely to school officials. Until such time as the individual perceives the existence of the need and commits to work toward its elimination, these officials can either ignore "their" problem or can exercise a directive manipulative approach in order to promote that student's behavior change. Manipulative strategies are not unknown to school psychologists and counselors who have been exposed to behavior modification principles and techniques. In situations where it is impossible to involve a youth in decisions about strategies aimed at behaviors which are injurious to himself and/or to others, a strong case can be made for such directive, structured interventions. Therefore, these interventions should not be omitted from the realm of treatment alternatives considered in any truly comprehensive guidance system. Nevertheless, since that youth has not consciously or willingly accepted the problem as his own, no reference should be made to his having a "personal problem."

Upon the foundation of these concepts of need, goal, objective, problem, youth involvement, and individualization, the framework for systematically designing a comprehensive guidance system will be constructed. The remainder of this section will concentrate on systems analysis activities involved in the identification of needs and related objectives.

Target Populations

What persons should receive the attention of guidance and counseling programs? Shaw and Tuel (1966) believe the target population should not be students because:

> the guidance worker's basic objective is to appropriately affect the learning environment, . . . and since he is trained primarily as a specialist in human behavior, it seems logical that his primary function in the school system would be to work with, and through those people who most directly influence the child's learning environment, i.e., parents and teachers (p. 828).

Assumption #5 in the previous chapter demands that the primary focus of school guidance should be students (rather than teachers or parents), but even that does not resolve the issue since there is still a difference of opinion on which students should receive attention. Guidance and counseling programs often are criticized because they provide extensive services to select groups of students, such as the college bound or the behaviorally deviant, while totally neglecting others or providing them with more superficial or intermittent help. Assumption #3 speaks to this criticism by dictating that the guidance-related needs of all students must be addressed by guidance and counseling programs.

Both of these assumptions compound the data collection and program design problems which even exist in dealing with small groups of students who receive all available attention. If these assumptions are accepted, the first monumental step should be the gathering of comprehensive needs assessment data representative of all students since, as has been discussed earlier, the key unit of needs assessment should be the student. One strategy for expediting this assessment procedure is to assess the needs of representative samples of students who seem to have characteristics similar to those of other youth in the various subgroups from which they were selected. Then, a feedback verification process should be used to determine if the sample needs assessment data collected are representative of the total population needs.

Terminal Competencies Desired

The purposes of guidance and counseling programs should be stated in the form of objectives which specify the desired terminal behaviors or outcomes of specific student target populations. These statements of terminal behaviors must clearly indicate what each student should be able to do as a result of undergoing program instruction or counseling. Such statements can then serve as the bases for the selection of appropriate instructional-counseling strategies and evaluational techniques and procedures. The overall aim is for each program in a comprehensive career guidance system to include these objectives, as well as learning strategies and tests instruments necessary to enable every student to have assistance in meeting his guidance needs. In order to progress toward this type of an individualized system of guidance and counseling, it is necessary to have the resource capability to produce needs assessment data, related objectives, and the materials and procedures needed to meet each student's particular problems, as well as the authority necessary to implement the programs thus developed.

The principal portion of any useable objective specifies the terminal behaviors or outcomes desired by or for the students entering a program. Varied approaches have been used to identify possible terminal behaviors for guidance programs. For example, for the design of vocational guidance programs, professional literature is replete with theory-based opinions and subjective observations of phases in the vocational development of youth and these often are used to suggest particular youth needs. There are also a number of reports using supposedly objective data collected through needs surveys of current students and follow-up studies of school graduates and dropouts. Too often such data involve abstractions which are difficult to translate into specific student knowledge, skills, attitudes, and overt behaviors. Since the most promising approach to the identification of terminal behaviors is to rely on empirical data collected on current and former student guidance-related needs and problems, some recent attempts to accomplish this will be reviewed below. The purposes of this review are to point out strengths and weaknesses in these attempts and to make suggestions for improved needs assessment instruments and procedures.

Literature review. Some extremely comprehensive follow-up studies have been conducted for the purpose of improving educational subsystems including guidance. An example is a recently completed study (Eninger, 1965, 1968), based on a large national sample of American high schools, of the processes and products of programs in trade and industrial vocational education. The questionnaire used in this study included typical items requesting reactions to vocational counseling and job placement assistance provided in the high schools. However, data collected through such questions contribute little to the problem of clarifying student objectives and related outcome behaviors on which improved guidance programs should focus.

Two other parts of the Eninger questionnaire focused on more meaningful data which have implications for improvements in needs assessment approaches. One was a section asking graduates to indicate, among other things, how important various skill areas like "personal relations skills . . . dealing with people" were for their present jobs and whether they felt they could have profited from more instruction in this area. Although it represents a laudable effort at collecting data concerning skills which pay off in a real world occupational setting, the label "personal relations" is not sufficiently specific to provide information useful to a program developer. In other words, Eninger's strategy moves in the direction of determining desired competencies, but the data lack the specificity needed for guidance system purposes.

The other relevant section of the questionnaire dealt with the recruitment and selection of students for vocational education programs. For example, Eninger (1969, pp. 2-66) reported that for samples of students from the 1953, 1958 and 1962 years, vocational graduates who entered and were found working in occupations related to their fields of study experienced more favorable occupational outcomes (e.g., present job wage rate, and job satisfaction) than:

- academic program high school dropouts (35%)
- academic program direct to work graduates (38%)
- academic program college dropouts (33%)

These findings suggest that many students in academic programs might have received a more appropriate education, as far as subsequent occupational outcomes are concerned, if they had selected and completed a vocational program. Another finding outlined in this same report indicated that on the basis of 394 vocational courses an average of 32% of the graduates would not have been recommended to the employers in the occupational area these young people studied. This raises questions concerning the wisdom of their original course selections. All of these findings point to recruitment and selection problems which a guidance system could help resolve, but they do not provide sufficient detail on exactly what the resultant guidance programs should enable students to do--i.e., the terminal competencies students should possess. Such detailed outcome information was not an intended product of Eninger's work.

Compared with the Eninger study, most other follow-up studies contain major flaws. A typical approach has been to ask students to indicate the most as well as the least beneficial courses and services provided during their high school experience (e.g., Donaldson, 1969; Cook, 1963). Campbell (1968) in his national survey of vocational guidance in secondary education attempted to go beyond this type of superficial probing. He asked approximately 7,000 respondents (parents,

teachers, students, school administrators, and counselors) detailed questions about available and needed guidance services. His procedure of involving the key participants in the educational process in needs assessment activities is consistent with the approach recommended earlier in this chapter. As an extension of this procedure, it might be even more desirable to have them interact with each other during the collection of preliminary assessment data and/or during the review of data collected from them separately.

Campbell used a variety of item formats to get students to indicate which of the following services were available in their schools, which ones they had used, and which ones were not available in their schools but definitely were needed:

1. help in choosing occupations
2. interpreting and understanding test results
3. improving study habits
4. help in being admitted to post high school educational institutions
5. dealing with personal and social adjustment problems
6. getting a job after graduation
7. selecting school subjects
8. conducting parent conferences
9. planning programs of studies
10. evaluating school progress
11. learning about the world of work (e.g., salaries, job promotions, fringe benefits, job adjustment, etc.)

In addition, Campbell asked students about their procedures for contacting counselors; what specific job information they knew was available; and their reactions to available occupational pamphlets and publications. This type of detailed approach should produce useful findings for persons interested in specifying terminal behaviors upon which to develop guidance programs. However, there still is room for improvement in the specificity level of the items. Hopefully, these improvements would be achieved in surveys solely dedicated to the gathering of data meaningful for the design of guidance and counseling programs. No such surveys were found; therefore, the only alternative was to glean ideas from slightly relevant approaches and then to construct a more appropriate technique.

Fifield and Watson (1967) reported the results of a more localized follow-up study conducted in two Idaho cities in which they focused on the educational and occupational experiences of high school graduates over a ten-year period (1954 to 1963). They sampled student attitudes toward the general effectiveness of various educational programs including the guidance services. For example, students were asked to indicate on a four-point scale their reactions to the following guidance program aspects:

1. understanding interests, abilities, and limitations
2. interpreting tests
3. deciding what courses to take in high school
4. meeting some personal and social problems in high school
5. planning for current work
6. getting adjusted after graduation
7. deciding whether or not to go on to college or to school
8. choosing a school or college
9. getting into a school or college

Fifield and Watson's list bears marked similarity to the areas touched by Campbell's national survey. However, the questionnaire used in the Idaho study took an additional tack in trying to get students to identify major personal adjustment problems encountered after graduation from high school. These researchers apparently assumed that if students were to identify such problems, guidance leaders would gain information regarding both developmental phase programs which they should design in order to help other students avoid such problems and prescriptive phase programs which should be aimed at students currently encountering such problems. In order to arrive at their personal adjustment data, Fifield and Watson asked their questionnaire respondents to check items which applied to them from those listed below:

1. accepting adult responsibility
2. finding a job
3. adjusting to college life (academic)
4. adjusting to college life (social)
5. adjusting to married life
6. financial problems
7. getting out on my own
8. no problems
9. other (specify)

The abstractness of these items reflects the ambiguity which undoubtedly was characteristic of the data collected by them. These data simply would introduce areas of concern which would have to be investigated in more detail if information for determining student terminal competencies was needed by guidance program developers.

There are two especially serious limitations which plague follow-up studies of graduates and school dropouts: (1) the questionable validity and accuracy of students' recall of their previous school experiences, and (2) the appropriateness of such information when it is applied to needs and problems being faced by current school students. By the time follow-up study information is reported, too often the actual respondents are at least five to ten years beyond their high school experience. Some attempts are being made to overcome this problem by doing intense analyses of current student reactions. For example, in Santa Clara, California a countywide survey (Bay, Preising, DeJong, 1968) of the reactions of 4,457 tenth-grade students was conducted in 1968 and reported as a "need assessment" for schools in that county. Two of the techniques in this particular survey were to ask students to indicate areas in which they wished the schools would help them, and areas in which they also felt the schools were doing the poorest job. These techniques can also be criticized since they ask young students questions which they might not be able to answer because they do not know what they will need later in life. Such students also might not have sufficient "observational distance" to be able to criticize current educational services objectively. It is predicted that no approach to needs assessment will be safe from criticism.

Examples of Santa Clara County items which possibly might produce data relevant to the design of guidance and counseling programs included the following:

1. receiving help from counselors on personal problems
2. helping to make school rules
3. being involved with the problems of other people in the community
4. understanding yourself
5. knowing how to handle emotions
6. having parents and teachers talk together
7. understanding why you act as you do
8. understanding what contributes to a good family life
9. helping you think that learning is important
10. helping you feel that it is worthwhile to do something with your life
11. helping you have the skills needed to make a living
12. helping you believe that democracy is important to individuals
13. having opportunities to discover what you would like to do with your life
14. having information about future employment opportunities
15. feeling that you are now profiting from what you are studying
16. learning about life as it really is
17. understanding the causes of racial disorders in cities
18. understanding the purposes of law and order

Even though these items on which data were collected are more comprehensive and specific than any of the other surveys reviewed here, once again the results provide little more than hints of the types of terminal behavior areas upon which program development and evaluation can be based.

Two alternate procedures which procured detailed data should be noted. A study conducted by the American Institutes for Research (Flanagan, 1966) for a school district in the eastern United States, attempted to combine data from both former students (one to five years out of school) and current students at the fourth, sixth, and high school-grade levels. Open-ended questions were used in order to get at more behaviorally specific information than that typically available through such surveys. Examples of the questions used were: "When you need help in learning, to whom do you go for help?" and "Do you get the help you need?" The high school students sampled also were asked to indicate a recent illustration of a need they had experienced, what had happened, and their opinions of how well the school had met their particular need. Furthermore these students were asked to identify effective and least effective things the school had done in helping them to meet their particular needs.

This investigation of current students involved innovative strategies including the use of open-ended (i.e., free response) items and the collection of some data through interviews instead of through group administered or mailed questionnaires. These strategies suggest that future attempts to collect data on desired student outcomes for guidance and counseling programs should include viable alternatives to the short-answer format typically used in surveys. The difficulty of the less structured approaches becomes quickly apparent once the data compilation process is begun, particularly when large samples of youth are studied. However, it seems quite possible that the desirability of collecting large sample data through massive surveys could be counterbalanced by the benefits of using sensitive but representative investigations conducted on smaller scientifically selected samples of youth.

In 1960, Project TALENT, a 20-year follow-up study, began by assessing the aptitudes, abilities, interests and background information of over 440,000 American high school students (Flanagan, et al, 1962). Although this project is a very reputable follow-up study, guidance program developers have received only indirect assistance from its results because TALENT was not initiated for the explicit purpose of collecting data which could be translated into student terminal competencies for guidance and counseling programs. The approach used in this longitudinal study provides a highly specific model for career pattern studies; however, it was designed basically to provide test-validation data and to provide background characteristics of students pursuing various career paths, not for the explicit purposes described here. Its purpose was not to assess youths' felt needs. In performing this modelling role, however, it does establish some guidelines which should be followed by program planners who recognize that needs assessment procedures should be administered on a longitudinal rather than a "one shot" schedule.

Recommended approaches to needs assessment. Most of the studies described earlier attempted to involve students in making recommendations for improvements in educational subsystems. Most contemporary youth desire to be more involved in making decisions relevant to both institutions in which they participate and to their own personal futures. Youth participation should be attempted in the area of guidance and counseling program development after young people have been given sufficient background so that they can make informed contributions to the stating of desired terminal competencies. Program developers should communicate closely with youth to help them identify their concerns and to tie these down to factual reports of behaviors students need to acquire or to modify. Students should not be asked to help in program design without having opportunities to consider possible alternatives that could be incorporated into such programs. During the process of eliciting student participation, attempts should be made to explain some of the possible alternative programs and program elements.

One needs assessment strategy that has not been explored in detail involves intensive behavior analyses of the problems faced by youth both during and after their elementary and secondary school experiences. Such behavioral analyses can be used:

(1) to identify those behaviors students need to acquire and to perform in order to function effectively in youth and adult roles both within and outside of the school setting.

(2) to identify behaviors which seem to interfere with the learning of these effective behaviors;

(3) to collect data regarding internal and external stimulus conditions (e.g., conscious thoughts, environmental factors, etc.) which: (a) seem to have influenced the learning and past performance of both types of behaviors, and those which (b) seem to currently maintain or reinforce performance of these behaviors.

To implement a behavioral analysis approach for these purposes probably requires detailed interviews, observations, or case investigations. Former youth who had experienced success and satisfaction in various adult roles and similar individuals who had experienced an inability to perform these roles effectively could be sampled. For guidance and counseling programs concentrating on current youth roles (rather than anticipated adult activities), the same general approach could be used by collecting detailed information on the effective and ineffective performance and the prevailing control conditions influencing young persons who are presently in such roles. Studies could be made of persons

selected through stratified, rather than random, sampling techniques. The stratification considerations should match the characteristics of the various subcultures within the student population for which each guidance and counseling program will be designed. Eventually, discriminations between effective and ineffective behaviors could be used to facilitate the identification of program terminal objectives for these students.

It is anticipated that in subsequent adaptations of the project reported here attempts will be made to develop interview instruments which will involve students in a process of identifying terminal competencies which they believe guidance and counseling programs should help them acquire and perform. Student and adult interviewers will be considered. Each interviewee will have an opportunity to review a series of competencies printed on cards pre-sorted into understandable categories. He will also be able to add to this series any he thinks have been overlooked. Rankings will be employed in an effort to produce meaningful data which can be collated across student subgroups. Some students will be interviewed in more depth in order to obtain the detailed behavior analysis information described earlier. Variations of the student instrument will be considered for administration to other individuals (e.g., parents, school administrators, pupil personnel workers, teachers, etc.) who have interest in developing and evaluating a comprehensive career guidance system and its specific programs. It is predicted that this needs assessment strategy will combine strengths and avoid weaknesses noted for many of the survey approaches reveiwed in the previous sections of this chapter. The lists of competencies can be extremely comprehensive and yet sufficiently behaviorally specific to provide youth information which will clearly facilitate the writing of instructional and counseling objectives for individualized guidance programs. In addition, the process will be open-ended both during initial and follow-up interviews and should be more motivating for the interviewee than would be the case if survey questionnaires were used as in earlier studies.

The design of guidance programs in the developmental phase of a comprehensive guidance system should involve the integration of this type of personalized behavioral analysis data with information from other sources if such information can be made specific and meaningful. Example information sources include extensive theories of career development and experimental research investigating various ways that the developmental patterns of youth can be modified. Educational personnel both within the school system and from post-high school education and training programs have important information students must consider in making their long-range career decisions and plans. Societal needs as expressed through community expectations, including the needs expressed by industry and business, must be given due consideration, along with student-initiated data, by those persons developing objectives for guidance and counseling programs.

In respect to the prescriptive phase of guidance, behavioral analysis data on the desired terminal competencies of students should be more meaningful than data available through instruments traditionally used by counselors to help students assess the problems. For example, the Mooney Problem Check List attempts to collect youth problem information by presenting students with an extensive list of 300 problems which might be troubling them. Even though such a list is much more comprehensive than those used in any conventional follow-up

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behaviors, (b) incompatible behaviors which
performance of the desired behaviors; (c) situ-
frequently influence the acquisition and performance
behaviors, (d) methods for determining
person is able to perform such behaviors; and (e) con-
inside and outside the youth's control which can elicit and
the desired behaviors. To conduct successful behavioral analyses,
counselors, interviewers and observers must be able to recognize (without
assistance) the types of critical behaviors basic to terminal
objectives, as well as the antecedent and consequent events
which contribute to the occurrence of such behaviors.

Once the desired terminal outcomes for a guidance or counseling program
have been determined, they invariably have to be adapted to each youth's goals
and characteristics. This is an integral step in any truly individualized
program. Even if a particular terminal objective for group
or class completion is established, the counselor will be able to assess where he currently
stands in relation to the terminal objective. Working with adults who share
the terminal objective, he will decide that he already has acquired that
behavior and that it is not relevant or appropriate. No personal
need exists for him in that area and a decision is made that
there is a discrepancy between current and terminal objectives and the
terminal objective is not considered a part of his career goal
plan. Whether or not the objectives that need as a personal
plan will be met depends upon whether he is interested in trying to
meet that need.

While the counselor terminal objectives in the areas of inter-
est may be attempts at assessing these skills in order to select
behaviors on which they will be most appropriate, for example assessing techniques
which will help them to use lists of behaviors while observing their current
performance or keeping daily records of behavior [illegible]. This type of
assessment process may help inform clients about behavior styles which could be a
continuation of or a change from behaviors associated with resolutions of the

counseling personnel and measurement techniques such as performance tests and behavioral observation records. In order to provide students with additional data against which they can check the validity of their perceptions, the critical incident technique incorporating counseling personnel observations has been investigated (Kratochvil, Jones, and Ganschow, 1969) and is discussed in more depth in Chapter IX. An example instrument developed to help students determine their competencies in the vocational guidance area is the Occupational Knowledge Survey (OKS) (Jones and Johnson, 1970) discussed in Chapter VI. As is discussed later in the current chapter, more emphasis needs to be placed on the development and validation of what might be termed "Guidance Placement Tests" which, unlike the OKS, would measure all types of student competencies including skills, attitudes, and overt behaviors, and not just knowledge.

Needs Statements and Behavioral Objectives

The final step in needs' identification and assessment involves a "packaging" activity of putting down in written form the data collected on terminal and entry competencies of youth in each target population. Guidance and counseling professionals, students and parents, and teachers and administrators should cooperate in stating the range of guidance-related needs upon which programs and services, directly and indirectly involving students, might be based. Needs' statements describe the nature and extent of discrepancies between terminal and current status competencies for individuals in the target population or for homogeneous groups of youth with similar needs in specifiable areas. Behaviorally operational objectives are developed from these needs' statements. However, the exact content and format of these objectives are determined by the nature of the audience (e.g., students, program developers, program evaluators, parents, teachers, school board members, public, etc.) for whom they are written. The same objective might have to be stated three or four different ways depending upon the nature of the audience involved. On this issue of the content of objectives, Briggs (1970) pointed out that:

> Many important purposes are served by stating educational objectives, and the kinds of statements that are relevant to each purpose differ. More specific objectives are needed by a teacher or a course designer than are needed for other purposes (p. 34).

Regardless of the purpose for which objectives are stated, they all should specify student performance outcomes, (i.e., exactly what the student will be able to do). In order to accomplish this, objectives must concentrate on student terminal competencies and assume that decisions about target population and student entry competencies were made explicit in the needs' statements from which the objectives were derived. Briggs (1970) presented an excellent summary of the role and development of behavioral objectives in instructional design. He accepted Mager's (1962) three criteria for what must be specified in objectives:

(1) the materials or objects with which the student will be provided;
(2) what he will be able to do (i.e., the terminal competence); and
(3) how well he will be able to perform it.

Then, he went on to illustrate how objectives can vary along a dimension of generality-specificity. Included in his list of examples are national educational

aims, local school aims, local curriculum decisions, course objectives including life-long objectives and end-of-course objectives, and unit and specific objectives.

In Chapter VII, the activities of identifying terminal competencies and translating these into objectives at varying levels of specificity are illustrated in the guidelines used in the development of a program for effective personal problem solving. Helping young people to solve real-life problems wisely often has been viewed as the central task of the guidance movement. In this program, a comprehensive list of 28 behaviors postulated to be conducive to effective personal problem solving served as terminal competencies expected of students and was used to derive program objectives for instructional materials development. From the program development objectives, sets of objectives for program evaluators and student use were formulated.

The process of defining explicit objectives at various levels of specificity for various purposes can be very exacting. At the same time, the advantages of performing such detailed activities should be readily apparent. It is postulated that many of the previous attempts to help youth develop personal problem-solving skills have been ineffective because of the lack of operationally meaningful objectives phrased in terms of student performance. It is predicted that if such objectives are specified for all types of guidance and counseling programs key steps will be made toward the improvement of guidance and counseling services in school systems.

2. Classification of Objectives by Commonalities and Priorities

Needs statements translated into meaningful behavioral objectives should constitute a rather extensive data bank of guidelines for guidance and counseling activities and later should be linked to alternative types of assistance available for students. To expedite student comprehension of the available alternatives and to foster improved administrative efficiency in the development and evaluation of programs, the data bank of objectives should be organized in a meaningful fashion. One organizational approach involves finding commonalities among the various needs and related objectives by determining how they group together in terms of their content or purposes.

Commonalities of Objectives

One example of grouping student needs and objectives by content is that which resulted from data collected through youth needs surveys, follow-up studies, theories of career development, and analyses of successful guidance programs and guidance-related research projects. These activities led to the tentative classification of the following six interfacing content areas of student needs:

Vocational. Behaviors related to exploring and making decisions concerning both opportunities in the world of work and personal characteristics related to such opportunities.

Educational. Although often related to vocational behaviors, behaviors in this area involve exploring and pursuing educational

opportunities independent of, or not immediately having, vocational concomitants. These behaviors involve exploring, making decisions concerning, and pursuing the amount and kind of education and training one wants during and after elementary and secondary school and throughout life.

Personal-Social. Intrapersonal competencies needed to function effectively as an independent person and interpersonal behaviors needed in small group situations, including two-person relationships. Behaviors applicable to various settings including home, classroom, and marriage.

Academic-learning. Behaviors involved in handling difficult situations and varied learning tasks more effectively and efficiently. Learning how to learn in varied settings, not just in the formal classroom, is of prime concern as are one's thoughts and feelings in non-social interaction settings.

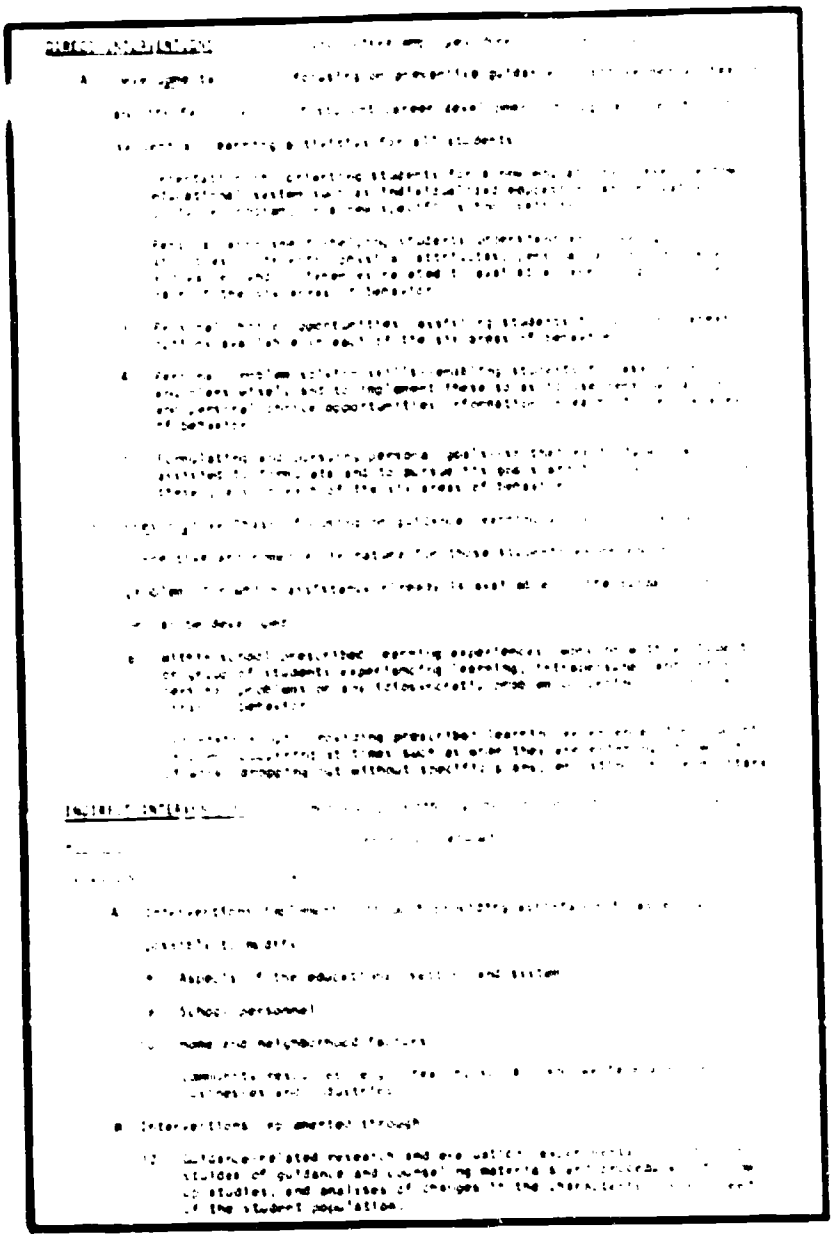
Citizenship. Behaviors differentiated from those in the social behaviors area because they are appropriate to larger groups of people and to secondary (e.g., government) rather than primary (e.g., family) social systems.

Leisure. Behaviors utilized in the exploration of leisure, cultural, recreational pursuits and behaviors involved in exploring one's personal characteristics related to such pursuits, making decisions on the basis of such information, and pursuing one's involvement in available opportunities.

The following example of classifying student needs and objectives by their common aims and purposes cuts across the above six content areas. The classification procedure illustrated in Table 1 identifies the 12 *components* postulated to include all functions needed for a comprehensive career guidance system and, therefore, is more conducive to the actual development of guidance and counseling *programs* than is the content classification scheme. Undoubtedly, program developers in such a system will have to make additional groupings of students' needs and objectives in order to efficiently carry out their program design activities. In any additional grouping or regrouping, each group of related behaviors should be treated as a program unit with its own instructional and counseling strategies and materials and with its own evaluation procedures.

TABLE 1

GUIDANCE SYSTEM COMPONENTS



Priorities Among Groups of Objectives

A major benefit which can accrue from systematic analysis of student guidance-related needs and the specification of groups of objectives derived from these needs is the decision-making perspective permitted by comprehensively mapping out these guidelines for all possible guidance and counseling programs. As indicated earlier, the personal relevance of groups of objectives and specific objectives will depend on the goals of students in the target populations involved. In most school settings, many and varied guidance and counseling programs probably will be required. If this will be the case, decisions will have to be made regarding the sequence of specific program development and implementation. Far too frequently, such comprehensive decisions about program priorities are neglected because guidance professionals choose, or are forced, to devote their time to crisis intervention, "putting out brush fires," or to what sometimes has been called "dispensing the immediate." Hopefully, program design which has reached this particular point

through the application of a systematic approach to discovering needs and specifying objectives will not have to fall back on unsystematic decision making governed only by limitations in staff, facilities, and resources--let alone by unsophisticated administrative leadership.

Before decisions regarding program priorities can be made wisely, the criteria for establishing these priorities must be established. Characteristics of the target area and the target population for which programs will be designed will influence the selection of criteria. Example criteria include: chronological order of occurrence of students' needs, degree of severity of the needs, student interest levels, number of students involved, fiscal constraints, facilities available, or supply of qualified staff. Criteria selection should be conducted in concert with the students and parents whose interests are being served. In an optimal situation where few constraints have to be placed upon this decision-making process, individual students' needs should be stressed as much as possible. As the number of constraints increases, then one alternative is to group students' needs by similarities or even to go beyond this to focus programs only on the needs of the largest or most representative groups of students.

A close study of components listed in Table 1 suggests that some decisions regarding priorities also could be made on the basis of the categories into which these components have been grouped. For example, as noted earlier Shaw and Tuel (1966) prefer that programs involving indirect interventions be given top priority for guidance and counseling staff time and effort. Assumption #5 is incompatible with their recommendations since it encourages focusing on direct intervention programs and recommends that attention be directed first to programs in the developmental phase of guidance and next to programs in the prescriptive phase. In any school setting where attempts are made to rank-order program priorities, the rationale underlying such decisions should be made explicit and the participants who will be most affected by the decisions should be informed of the alternatives available and should be involved in the choices that have to be made.

3. Specification of Alternative Strategies and Selection of One or More

To this point no consideration has been given to the identification and design of strategies and materials which hold promise for helping youth effectively and efficiently master high priority objectives or groups of objectives. This has not been inadvertently omitted but has been consistent with Lohnes' (1969) recommendations made in the previous chapter. Means considerations should be held in abeyance until detailed attention has been directed to clarification of youth needs and program purposes. Having achieved clear statements of priority needs and related objectives, program and evaluation designers should now be able to demonstrate creativity in selecting and investigating a wide range of possible instructional, counseling, and evaluational approaches. Once again, this is an activity in which youths and parents should be involved.

We have been attempting to: (1) compile a body of techniques and procedures which can be used in implementing the 12 components outlined in Table 1; (2) to evaluate the effectiveness of some of the currently available techniques and procedures; and (3) to conduct developmental work where ones have not been

available. Such efforts will not exhaust the range of possible strategies but will permit experimental comparisons of the relevant effectiveness of a few alternate approaches. Examples of materials and strategies that have been investigated include: booklets, films, audiotapes, videotapes, group discussions, visitations with community resource persons, individual and group interaction, discussions with fellow students and with counseling personnel (i.e., teachers, counselors, school psychologists, school social workers, paraprofessionals, and any other school personnel having direct counseling interaction with students), computer monitoring, and on-line computer assistance.

Of all the recent innovations in guidance-related instructional and counseling strategies, including a proliferation of multi-media presentations, group counseling procedures, simulation games, work samples, and problem-solving kits allowing youth to reality test actual job experience, perhaps the most significant developments to date have been computer applications, particularly in vocational guidance. In order to illustrate the wide variety of strategies available through a single medium of presentation, the remainder of this section will focus on alternative computer approaches. The basic purpose of these illustrations is to indicate the innovative thinking that can lead to adopting a resource, such as a computer, for a plethora of instructional and counseling purposes once the terminal competencies of students have been specified. Not too surprisingly, the guidance computer applications which have received most publicity have been those involving the direct intervention components identified in Table 1. In the following paragraphs, this type of application is referred to as a computer-assisted approach while each application which concentrates on the indirect intervention components of Table 1 is labelled as a computer-supported strategy.

Computer-assisted applications involving students in an interactive mode at the input-output typewriter of a computer terminal have received extensive investigation. One of the best publicized projects was the Information System for Vocational Decisions (ISVD) developed at Harvard University by Tiedeman and colleagues (cf. Tiedeman, et al, 1967). This comprehensive system attempted to build in the flexibility necessary for students to take a leadership role in interacting with computerized assistance related to the vocational areas of components two through five listed in Table 1. ISVD intended that students should: (1) explore data on themselves and available educational and vocational opportunities, (2) develop their decision-making skills through a career simulation game, and (3) use those acquired skills to translate such data into information necessary for making personally meaningful vocational and educational decisions. The remarkable attempts this project made toward achieving an open-ended system in which each student experienced freedom in determining his own goals are characterized by ISVD's progress in the area of natural language programming. If the plans for such computer programs had been realized, students would have been able to converse with the computer in their natural conversational mode. In the light of the current status of both computer technology and educational finance, the probability of installing an ISVD-type system in most conventional schools has been recognized by many persons to be particularly low. However, ISVD's aim of enabling each student to feel a "sense of agency" in being free to make and capable of making career decisions, especially when assisted by computer technology, must remain as a prevailing theme for all guidance and counseling programs.

A more restricted but currently operational approach to computer-assisted guidance is the Educational and Career Exploration System (ECES) developed with the computer technology expertise of IBM and the guidance and counseling knowledge of staff, especially Donald E. Super, at Teachers College, Columbia University (cf. Minor, Myers and Super, 1969). Unlike ISVD, ECES received a three-month field field test (Thompson, Lindeman, Clark and Bohn, 1970) in New Jersey and is currently being evaluated with students in Flint, Michigan. Other examples of computer-assisted educational-vocational guidance approaches which have been made or are being investigated include the System for Interactive Guidance and Information (Katz, 1969), Computer-Assisted Career Exploration (Impellitteri, 1967), and the Computerized Vocational Information System (Harris, 1970). All of these touch with varying degrees of depth and reputability on the educational-vocational aspects of components two, three and five of the comprehensive guidance system outlined in Table 1. Another alternate computer approach focusing solely on component three involves providing students with large information banks of educational and occupational data. Many such alternatives are currently being marketed within price ranges considered feasible for modern school systems.

A number of innovative computer-supported strategies involve procedures which are within the budget limitations of school districts but are beyond the more administratively oriented pupil accounting and business management activities usually computerized by school districts. Smith (1969) reported one approach, ALERT, derived from Cooley's (1964) description of a "computer-measurement system for guidance." The purpose of ALERT was to use data derived from follow-up studies of four successive classes of graduates in order to monitor current students' plans, activities and characteristics. The computer apprised counselors of "alert" conditions for specific students, such as those who had selected courses considered inappropriate for their post-high school educational plans, whose grade-point averages did not measure up to their post-high school plans, or who were not enrolled in classes required of all graduates having similar plans. The types of computer-monitored activities programmed by Smith are exemplary illustrations of indirect interventions in which technological resources can be used in a student's behalf in order to tailor the educational setting and system to his needs and multipotentialities.

Flanagan (1970b) presented examples of computer-supported indirect interventions implemented in Project PLAN, a nationwide attempt to provide individualized education. PLAN is perhaps the best available example of a computer being used in diverse ways to: (1) enable guidance programs to integrate with student learning activities in subject matter disciplines; and (2) provide a wide variety of indirect interventions which facilitate student career planning, particularly through helping each student and his parents to develop his program of studies of specific instructional modules and teaching-learning units related to his long-range educational-vocational goals.

> The major *strategy* of the PLAN educational system is related to the guidance and individual planning functions, the program of studies, and the analysis of students' results on module and achievement tests. These aspects are also heavily dependent on the computer, primarily for doing scoring, record keeping, matching, and making predictions and indicating probabilities. The computer thus becomes a very

> valuable resource for the teacher and student in planning and guiding the student's educational program (Flanagan, 1970, p. 9).

Procedures such as these provide the clearest derivations of Assumptions 1 and 4 stated in Chapter II. PLAN guidance programs will be discussed in greater detail in later chapters of this report.

One computer-supported function planned as a future addition to those which Flanagan lists above is the processing of critical incidents of student behavior recorded by students and their teachers, and the subsequent suggesting of prescribed learning experiences which students might decide to explore in order to help them maintain or improve behaviors related to their personal and social development goals. A second possible addition involves computer processing of simulation experiences which provide students with opportunities to practice career decision making and planning skills. Simulations would be developed using student data available through large data banks such as Project TALENT and would enable students to explore and to plan hypothetically the career developmental patterns of anonymous students. This simulation process would enable students to compare the decisions and plans they construct for each data bank student against those actually implemented by that student. A more detailed treatment of simulated career planning exercises can be found in Chapter VIII.

The computer-assisted and computer-supported strategies just described illustrate the wide array of possible enabling procedures available for guidance and counseling programs. Numerous other examples could be appended using media other than computers. The conclusion which should be drawn from these illustrations is that when such a monumental cafeteria of resources is available from which guidance program developers and students can identify alternative strategies and can decide on a specific strategy or strategies to implement, guidelines must be available to regulate this decision process. Primary guidelines are the predetermined desired competencies, needs and related behavioral objectives of the programs' target audiences. Only when decisions regarding enabling procedures are delayed until such guidelines are meaningfully clarified can relevant, purposeful student and parent programs be selected and developed. When more than one desirable strategy is available for any behavioral objective or set of objectives, constraints in addition to those imposed by the learning value of the materials and procedures should be considered. A second set of guidelines should be based on empirical data collected through reputable research and evaluation studies. Too few data indicating what works with which students under what conditions are available as determinants of strategy selection decisions. Regardless of which guidelines are used, the selection criteria should be stated explicitly in advance and, wherever possible, should be derived from consultations involving guidance and counseling professionals as well as representatives from the target population. Throughout this decision-making process, such criteria as cost, staff availability, staff skills, and school plant facilities should be given delayed consideration in the selection of instructional and counseling strategies which will be used in the design and implementation of guidance and counseling programs. If these criteria are considered prematurely, the creative design

of potentially effective strategies can be stifled by the weight of what is "practical."

4. Design, Scheduling, and Implementation of Selected Strategy or Strategies

The organization and implementation of programs keyed to particular objectives and composed of related instructional-counseling strategies, necessitates concern for school settings (including the immediate availability of trained staff and the coordinated scheduling of guidance-related programs with other academic activities) in which they will be tried and for the conditions (e.g., feasibility of a management information system perhaps computer supported, long-range supply of trained and motivated professional staff, adequate financial support, positive student interest, and degree of program adaptability to changing characteristics and needs of the youth in the target populations) which will expedite the maintenance of these programs, and of the comprehensive guidance system itself, over an extended period of time. Often this fourth step in the system analysis-development-evaluation cycle is one which is ignored or given only minimal consideration. Students, parents, and school staff need definitive suggestions of alternative ways to organize the guidance learning process and to put it into practice. One such alternative which is being investigated in many school districts is that of incorporating selected instructional and counseling materials and procedures into individualized guidance-related learning *units* presented in a separate guidance class or in selected time periods in various subject matter classes, or in such a fashion that they are integrated with (and are not distinguishable from) other instructional materials and procedures used by students. In Chapter VIII, an example process is described by which a group of counselors and teachers from the Santa Clara Unified School District in Santa Clara County, California, recently reviewed a data bank of 175 student-oriented educational and vocational guidance objectives. Subsequently, they chose 21 objectives to comprise a pilot developmental program for students in grades 7 through 12. Guidance learning units were then developed for these objectives and are currently being implemented and evaluated during class periods assigned to the basic subject matter areas.

Earlier in this chapter it was suggested that guidance and counseling techniques and procedures used in the indirect intervention components listed in Table 1 should be linked just as closely to desired student outcomes as should the direct interventions such as those noted throughout this chapter. For example, if systems monitoring, parent orientation, or community resource assistance (see Table 1, "INDIRECT INTERVENTIONS") are being initiated in a comprehensive guidance system, objectives should be developed for these interventions and these objectives should focus on the respective target populations (i.e., systems' monitors, parents, community resource persons). However, these objectives also should contain statements which directly link the desired terminal behaviors of these people with priority needs of students.

An illustration of this point is provided by counseling personnel who are attempting to implement what previously was referred to as a youth advocacy or ombudsman orientation--performing a role of active advocacy for youth concerns. These adults would attempt to determine whether or not the educational system is meeting, and is capable of changing to meet, evolving youth needs. This role of systems monitoring from students' viewpoints might include activities

such as the following:

1. investigate the processes by which each student is assisted to formulate his long-range career goals and to link these with intermediate and immediate goals and with instructional objectives within his program of studies;

2. interact with teachers and administrators to study the learning methods and materials which are being used in classes in order to determine if they do indeed enable each student to achieve instructional objectives specified in his program of studies;

3. monitor the school testing program to evaluate the efficiency and effectiveness of the various tests purporting to assist each student to assess his performance on his instructional objectives and his progress toward his agreed-upon career goals.

4. study the services offered by technical support facilities in order to insure that technology is efficiently and effectively enabling each student, parent, and school personnel to monitor student progress and to facilitate his planning and decision making; and

5. work with teachers and administrators to investigate the degree to which the environment of the school is facilitating each student's learning and personal development.

General activities such as these should relate closely to the developmental needs of students within the school setting. This necessitates that these activities be translated into meaningful behavioral objectives which can help regulate and evaluate the performance of counseling personnel. Such objectives should state the terminal outcomes which optimal performance of each activity should help all students acquire and perform within the school setting. Similarly, detailed analyses should be conducted and the resultant objectives should be stated for implementation activities of personnel and technology selected in the other indirect intervention components listed in Table 1. Perhaps guide sheets, like those illustrated in later chapters, are just as necessary for school staff engaging in these activities as they are for youth who participate in learning activities in guidance and counseling programs.

5. Evaluation of Strategy and Efficiency

To complete the initial cycle moving from systems analysis and into systems development and implementation and to provide feedback information facilitating validation or correction of previous phases of the systematic derivation of a comprehensive guidance system, concerted and early attention must be devoted to evaluation design, procedures and instruments. The delay of all systems evaluation considerations until the last phase courts failure since it implies that an inappropriate sequential "step model" is being used instead of the cybernetic model discussed earlier in this chapter and incorporated into the five-phase paradigm of activities described throughout this chapter. The cybernetic model has been used because it permits evaluation concerns to be entertained continuously from the beginning activities of assessing youth needs and translating these into behavioral objectives through subsequent program design and implementation activities. In fact, if each student-oriented objective upon which individualized guidance programs are designed does not identify both the measurable student outcome behaviors (i.e., what each student will be able to

'o) and the criterion levels demanded for performance of such behaviors (i.e., how well he will be able to perform), subsequent evaluation of program effects and efficiency will inadequately concentrate on superficial and perhaps unrelated outcomes (e.g., staff reactions, student opinions, student attendance, or parent support).

Evaluation design and procedures for measuring the impact of any part, or all, of a comprehensive guidance system must be directed toward assessing the degree to which each student's needs are being satisfied. This is measured by the extent to which students are achieving agreed-upon goals and objectives both within the total educational framework and more particularly within the guidance system itself. The evaluation process must produce feedback to the guidance system programs and to the total educational framework so that corrections can be made if student needs are not being satisfied due to deficiencies in the system. Some deficiencies might result from the changing and emerging needs of students as they adapt to, and mold, the rapidly changing society. All activities and programs must have this flexibility of adapting to changing conditions. For example, without it a guidance program focusing on the goal-oriented approach of assisting students with long-range educational-vocational planning might suffer from the weakness imposed by "assuming static conditions in both the collegiate and the work worlds" (Wurtz, 1966).

As implied above, evaluation design for individualized guidance must be criterion referenced rather than norm referenced since the evaluation of each student's progress toward individually appropriate objectives and goals is what is desired rather than the comparison of each student's progress with that of other students. Therefore, the ultimate criterion for the evaluation of any guidance program must be the degree to which its direct or indirect interventions facilitate the student's progress toward his immediate and long-range goals--that is, the degree to which each student's needs are being satisfied. Once behavioral objectives have been specified, the key element in criterion-referenced evaluation becomes the construction and continued improvement of evaluation procedures and instruments keyed to these behavioral objectives. To be useful, these procedures and instruments must be capable of assessing each student's status on each objective both before and after he has entered into a learning activity period. As in any feedback and correction cycle, evaluation data must help to refine the original objectives and the suggested student learning experiences.

It is recommended that here again students and parents must play a vital role in the evaluation process since by this time they should be particularly informed participants. They should be able to make educated judgments concerning the effectiveness and efficiency of the various guidance and counseling strategies to which they have been exposed. However, evaluation approaches involving only a student, parent or counselor "check" should not be considered sufficient. Specific measures should be developed to sample student knowledge, attitude, and overt performance outcomes specified in behavioral objectives. Those outcomes should be sufficiently specific and observable to school counseling personnel, parents and students that agreement will be possible as to when each student has achieved his objectives. To assist in the evaluation of direct intervention program outcomes, three types of instruments should be developed:

(1) Placement Tests should facilitate initial placement of each student within guidance-related units appropriate to his current developmental status. The purpose of these tests should be to identify, and to exempt students from working on, guidance and counseling activities which relate to behavioral objectives they already have achieved.

(2) Guidance Proficiency Tests should be the end-of-unit tests which help each student assess the extent to which he has achieved the objectives upon which a particular unit was developed. Each student should take a Guidance Proficiency Test after he has completed activities in a learning unit. No student should proceed to another guidance and counseling unit until he has mastered all of the objectives in the current unit considered to be appropriate for him.

(3) Guidance Survey Tests should be of two types. One type should be made up of some items similar to those used in three or four Guidance Proficiency Tests, and some items which measure students' abilities to integrate competencies they have learned in each unit. In essence, these tests should be designed to monitor the development of each student over a series of units he has just completed and, therefore, to check each student's retention of performance related to previously achieved objectives and to assess his ability to synthesize the competencies he acquired in a series of units. A second type of Guidance Survey Test should be used as a followup instrument to evaluate student achievement relative to a larger number of guidance and counseling units. This type of test is exemplified by a broad-band evaluation instrument such as the Occupational Knowledge Survey discussed later in Chapter VI. A second example is provided by the Goals and Behaviors Survey for assessing students' attitudes toward having or not having career goals in a number of areas of life. This particular instrument could be used as an evaluation instrument across a number of guidance and counseling programs. A third example is the Performance Record for helping students, counselors and teachers observe and record critical incidents of student personal and social behaviors in classroom and school settings. Every item on measures such as these three examples should be keyed to specific guidance and counseling objectives which students with the aid of counseling personnel might decide to select and to incorporate into their personal programs of studies. A final example of a more general followup type of Survey Test is the case study for assessing student and parent feelings, attitudes and opinions in regard to guidance and counseling programs. This procedure should be particularly effective in identifying important side effects of programs; ones which were not expected or identified in the evaluation design adopted.

Another important aspect in the process of evaluation design and procedures should be experimentally controlled studies particularly for identifying the most effective and efficient guidance and counseling strategies for helping students achieve each objective. An experimental study should be most germane when a series of alternate instructional or counseling strategies have been identified for the same objective or set of related

objectives. Here the major evaluation problem is to decide which particular strategy, if any, enables students to achieve that objective or set of objectives most quickly. This type of efficiency study is an example of formative evaluation which should facilitate continual revision and improvement of guidance and counseling programs. An example of this type of study is a recent attempt to experimentally examine the orientation of 165 fifth graders and 114 ninth graders to an individualized educational system. This study, which is summarized in Chapter IV and is described more fully elsewhere (Jones, Kratochvil, Nelson, and Stilwell, 1969), illustrates how evaluation of student outcomes can be tied to program objectives and how formative evaluation procedures can be used within a criterion-referenced design in order to identify and to develop more appropriate strategies for assisting students to meet those behavioral objectives. The optimal evaluation design would employ such studies over a long-range period so that more definitive statements could be made regarding longitudinal effects of various intervention strategies which attempt to assist student development. This type of approach has been labeled by Thoresen (1969) as an "experimental-longitudinal" procedure in which "all subjects are carefully followed over time, some subjects readministered with the same treatment while other subjects are exposed to other experiences" (p. 275). The optimal design also should include case studies of the career development of specific individuals sampled from the target population. These detailed case studies should involve the collection of baseline and post-treatment data on individual students so that definitive statements could be made regarding the effects which various intervention strategies seem to have had on each student's development. When used in conjunction with the two types of Guidance Survey Tests, case studies should facilitate both summative evaluation of the overall effects of various guidance and counseling programs, as well as the previously mentioned formative evaluation.

This discussion of evaluation design and procedures implies that school personnel who desire to take a more systematic approach to individualizing student guidance services should not relegate evaluation to a time period which receives attention when all other tasks have been completed. Evaluation should become an integral part of the daily use of guidance and counseling services. The reactions of the guidance consumers (i.e., parents and students) should be a necessary evaluation element (cf. Wysong, 1969) but should not be considered a sufficient condition for carrying out meaningful evaluation. On the other hand, evaluation should not be construed as totally product or outcome oriented. Guidance professionals must be aware of warnings such as those expressed by Messick (1970) when he commented on the dangers of an overemphasis on outcome evaluation in educational research. Messick demanded that evaluators study the following elements while attempting to assess the impact of strategies on anticipated student outcomes:

(1) study the complete educational environment, not just the students in that environment;

(2) investigate a wide range of possible outcomes including possible side effects of the intervention strategies;

(3) investigate the students' feelings and reactions to the intervention strategies; and

(4) investigate the nature of the actual process strategies which are producing the outcome effects.

Only when this type of extensive evaluation of guidance services is implemented will a complete and systematic approach be feasible for the design and application of programs in a comprehensive career guidance system.

Summary

This chapter has summarized into a five-phase paradigm a series of activities for developing, implementing, and evaluating a computer-supported, comprehensive, career guidance system of individualized school guidance and counseling programs. Evolving throughout the general discussion in this chapter has been a guidance system derived from the basic rationale and assumptions introduced in Chapter I and detailed in Chapter II. Three major systems activities are illustrated by the current chapter's paradigm. First, systems analysis in order to: (1) define problems facing guidance and counseling professionals, (2) make explicit the basic assumptions necessary for the development of individualized guidance and counseling programs, and (3) use these assumptions in the derivation of programs based on needs assessments and objectives-related data collected in concert with members of the target populations for whom such programs are being designed. Second, systems design, development and trial in order to: (1) classify student objectives by commonalities of content and purpose, (2) establish priorities among and within classes of objectives, (3) specify alternate strategies for helping students achieve these objectives, (4) select a strategy or series of strategies which then will be developed into programs aimed at helping students achieve groups of objectives, and (5) implement such a strategy or strategies within individualized learning units for each guidance and counseling program. Third, systems evaluation, feedback and correction in order to: (1) assess the process and product of the implementation of the selected strategy or strategies; and (2) feedback information which can be used at each phase in the paradigm and especially to validate an employed strategy or group of strategies, to improve a strategy or strategies, or to develop more appropriate ones. No attempt has been made to describe the interaction of these types of activities as a "one shot," static process. Rather, a cybernetic model has been proposed as more appropriate for conceptualizing the interaction of these activities and for providing feedback from one phase to another so that the reliability and validity of each previous activity can be verified or modified in an attempt to provide improved services. The main sustaining element of this complete systematic process involves accurate and comprehensive assessment of student guidance-related needs and translation of these needs into meaningful objectives. Without this base of empirical data, guidance programs and systems will be designed on whims, traditions, authoritative edicts, trials and errors, or questionable intuitive hunches.

The next six chapters of this report will summarize project activities on the first six components listed in Table 1 on page 36. These are the components which have received major attention. Each of the six chapters will follow a similar format including discussions of these seven topics:

(1) the process through which student guidance needs related to each component were identified and translated into rather specific guidance objectives;

(2) the classification of these objectives and the designation of classes deemed to be of a priority nature;

(3) the search for and selection from among a number of alternative strategies by which students might attain the objectives previously formulated;

(4) the actual design and content of programs as they are now taking shape as well as previous and proposed attempts to implement them in school settings;

(5) evaluation concerns and activities;

(6) suggestions for possible improvements in program materials and procedures, new areas of further research related to each component, and possible implications of each component for existing guidance programs and practices; and

(7) a listing of all materials which have been developed or identified in connection with each component.

The final two chapters of this report will briefly summarize the final six components identified in Table 1. Most of the discussion in these chapters will be speculative since project staff members devoted limited attention to these areas of the Comprehensive Career Guidance System.

Glossary of Terms for Chapters II and III

Career-- having to do with all possible patterns of choice not just those in the educational or vocational domain; refers to the individual's total life style involving his activities in all content areas (i.e., vocational, educational, leisure-recreational-cultural, personal-social, citizenship, academic-learning).

Goal, Personal--a desired state or set of conditions that has a regulating function over the individual's behavior; something toward which he might decide to direct his efforts; can be a long-range career goal or an immediate, short-range goal as constituted by an instructional objective, or group of objectives, upon which he might decide to work.

Instructional Objective--a guideline for the student's performance; contains details on: (1) the materials or objects with which he will be provided; (2) what he will be able to do; and (3) how well he will be able to perform it. Groups of objectives can be formulated into the student's program of studies which will constitute part of his immediate career-related goals.

Outcomes, Personal--that aspect of an instructional objective or a personal goal which specifies the terminal competence desired--i.e., exactly what the student will be able to do in order to demonstrate that he has acquired a certain overt behavior, an attitude or an understanding.

Goal Formulation, Personal--the process by which the individual selects and sets immediate and long-range goals from a universe of available goals for various areas of his career. Also, involves relating his personal goals to instructional objectives available in the total educational program. Once an individual has been assisted to select instructional objectives related to his career goals, these become part of his program of studies which should regulate his academic performance.

Personal Plan--an organized sequence of details, which might include a schedule for how the individual decides to go about formulating or achieving one, or a group, of his career goals or achieving his instructional objectives.

Planning, Personal--the process by which the individual establishes plans for how to formulate or to achieve one, or a group, of his goals or to achieve his instructional objectives.

Purpose, Aim--more general concepts representing the desired ends of systems, general programs, institutions, or organizations; but not necessarily the ends of specific individuals.

Need, Institutional--the discrepancy between conditions defining an institution's aims or purposes and what it currently is doing or achieving.

Need, Personal--the discrepancy between conditions defining the individual's present status and those defining his desired status as expressed either in one of his career goals, or in an instructional objective appropriate for him. Therefore, need satisfaction or reduction is synonymous with goal attainment or the achievement of an objective.

Problem, Institutional--an institutional need to which that institution decides to commit its energies in order to resolve the need.

Problem, Personal--a perceived personal need which the individual decides to resolve or satisfy; acknowledges that there is a discrepancy (i.e., a goal or an objective he could achieve) and commits himself to work at removing that discrepancy (i.e., satisfying that need). In the traditional mental health context, this concept usually is limited to a negative state of affairs. However, here this word is used to refer to a desire for positive growth as well as to the existence of aversive conditions of which the individual might be aware and to which he might make the personal commitment to resolve or terminate.

Individualized Instruction--providing instruction individualized to student personal characteristics and background of experience but not making any attempt to provide for students' individual goal formulating and planning.

Individualized Education--individualized instruction made personally relevant and meaningful through goal formulating and planning activities of individualized guidance.

Guidance--the total content and process aimed at helping students to develop and to protect their individuality and potential; includes instructional and counseling procedures coupled with evaluation based on youth guidance-related needs.

Counseling--an interpersonal process strategy which provides one type of alternative for achieving guidance-related objectives. In this process, counseling personnel (i.e., counselors, teachers, administrators, school psychologists, etc.) interact with students individually or in groups in order to facilitate youth career development.

Component, Guidance System--a group of youth guidance-related needs and derived objectives classified because of the nature of their content or purpose.

Program, Guidance and Counseling--within a single guidance system component directly involving youth, a set of individualized guidance and counseling units designed to help students achieve groups of objectives in one aspect of their career development.

Unit, Guidance and Counseling--an individualized learning package of materials containing: statements of related instructional-counseling objectives, suggestions of the materials students might use and procedures they might follow in order to achieve each objective; descriptions of the setting in which students should be able to perform the outcome behaviors specified for each objective, and references to an evaluation procedure or instrument which will help students determine whether or not they have met each objective.

Developmental Phase, Guidance System--components and related programs focusing on preventive guidance and positive mental health; facilitating student career development through a core of continuous, sequential learning activities for all students.

Prescriptive Phase, Guidance System--components and related programs focusing on guidance learning activities that are corrective or remedial in nature for a student or group of students experiencing specifiable problems for which assistance already is available in the guidance program or can be developed.

CHAPTER IV

COMPONENT NO. 1--ORIENTATION-IN

The first cluster of student needs which was identified in the process of delineating the components of a comprehensive guidance system was designated "Orientation-in." The aim of this component is to assist each student to acquire the various kinds of information, understandings, overt behaviors, and attitudes he needs in order to function successfully both in a new educational system or specific program and in the specific school setting in which the system or program operates. The target population for this component is all students who are entering a new setting or all students who are about to participate in a new system or program within the setting.

Identifying Student Orientation Needs

Student needs grouped together in this component were identified in a number of ways. Teachers and counselors working in various educational settings informally collected needs data through observing that students entering a new setting or participating in a new school system or program face special concerns and require special assistance in order to function effectively in that setting, system, or program. For example, during the initial year (1967-68) of individualized education in Project PLAN (cf. Flanagan, 1968) the observations of teachers, administrators and field consultants suggested that students needed experiences designed to orient them to this individualized educational program. In this framework appropriate student responses varied markedly from those in more conventional contexts. Extensive data, not too systematically collected, suggested that the longer a student had experienced conventional instruction, the more difficult it was for him to make the transition to Project PLAN. Staff observations indicated that specific orientation activities might reduce the number of students who appeared to flounder academically during the first months of the school year. Thus the first attempt to identify student orientation needs was performed by interviewing teachers and counselors who had had opportunities to observe student performance and to assess their reactions. "Orientation-in" needs were also identified by observing and interviewing students and developing case studies of their academic performance during and following the students' first few weeks in the new system. These procedures of collecting data from students revealed that students themselves perceived needs in this area. Extensive reviews of followup studies and research of current guidance programs and systems further indicated needs in the area of orientation.

In general the needs which were identified clustered into three areas. First, there were orientation needs related to the school setting. A sample of general needs in this area would include: a need to know the operating procedures of the school setting, a need to know any school regulations, and a need to be familiar with the physical school plant. A second area of orientation needs related to systems of education within the school setting--most particularly an individualized educational system for which the comprehensive career guidance system is designed. Orientation needs emanating from the Project PLAN system of

individualized education included a need to know how to prepare materials for the computer which monitors student progress in the system, and a need to know how to plan an individual program of studies. A final cluster of needs related to orientation to specific programs incorporated within the system and setting; for example, individual guidance and counseling programs which are designed to help students with their personal, social, or education and vocational development. Orientation needs of this type include a need to understand the purposes of such programs in addition to a need to know the necessary procedures in order to function efficiently and effectively in the programs.

These needs were then translated into related instructional objectives. Once the instructional objectives were clearly defined, they specified exactly what the oriented student should know, understand, express, and perform. These then are the desired behavioral outcomes and they in turn facilitate the selection and development of criterion measures by which the efficacy of orientation programs can be evaluated. From the orientation-to-a-setting needs which were identified, a complete set of instructional objectives and desired student outcomes relative to these needs was developed. The following are two sample instructional objectives and related outcomes which were translated from the student's need to know the operating procedures of the setting.

OBJECTIVE: To know and understand the unit system of credit at the school.

Student Outcomes:

1. Identify how many units are given for a selected group of specific courses.
2. State what the minimum and maximum unit load is.
3. Identify how many units are required for graduation.
4. Explain how many units are required for the various class standings.

OBJECTIVE: To know and understand the school's grading system.

Student Outcomes:

1. Identify the meaning of letter grades such as A, B, C, etc.
2. If letter grades are not used, explain the method that is used.
3. Describe the school's policy on incomplete course requirements.

Based on the needs of students entering an individualized system of education, a complete set of related instructional objectives, student outcomes and possible criterion measures was developed. These are illustrated by the following examples of what was used in the area of orientation to the Project PLAN approach to individualized education.

OBJECTIVE: To identify the four subject areas for which instruction is provided in Project PLAN.

Student Outcomes:

1. Identify these: Language Arts, Social Studies, Mathematics, and Science.

OBJECTIVE: To state some of the activities of a computer ... ...e PLAN system.

Student Outcomes:

1. State that the computer performs activities such as the following:

   a. scores tests

   b. keeps track of progress

   c. suggests TLU's

   d. stores information about each student

2. Explain the following:

   a. that the "input" terminal "reads" the PLAN communication cards

   b. that the "output" terminal prints information for the teachers and counselors

   c. that the computer can do only those things that teachers, students and the project's staff wish to assign to it.

Instructional objectives were also translated from student orientation needs to specific programs within the system and setting. Sample orientation objectives from the Personal and Social Development program which is a specific guidance program of the comprehensive guidance system is as follows:

OBJECTIVE: You will be able:

   a. to explain what "managing your behavior" means;

   b. to tell what kinds of things can be managed; and

   c. to tell what things are involved in managing behavior.

OBJECTIVE: You will be able:

   a. to define the term "personal problem"; and

   b. to explain how problem solving skills can help you manage your behavior.

Classifying Objectives by Commonalities and Assigning Priorities

The orientation needs and their related instructional objectives were then classified by commonalities. As has been mentioned, three clusters of needs and objectives were identified: (1) orientation to a school setting; (2) orientation to an educational system within the setting; and (3) orientation to specific programs within the system. The bank of objectives developed for this third cluster was classified into sub-clusters. At present there are objectives related to orientation to an educational and vocational guidance program, and to a personal and social development program. Definitions and examples of each of these three needs categories were presented in the preceding chapter.

In establishing priorities for this component, major emphasis was placed on orientation to systems and programs within a setting, rather than on orientation to the setting itself. Orientation programs of the latter type were already available in student handbook form or first-day-of-school activities in schools contacted by project staff and seemed to be considered successful by most school personnel. More pressing student needs were presented in the other two categories. Therefore, emphasis was placed on orientation both to general educational systems as well as to specific guidance programs. A major basis for further establishing priorities was the temporal sequence in which the orientation activities were scheduled. Orientation needs occurring at the beginning of the school year had to be met before orientation to subsequent programs in students' schedules could be provided. For example, orientation needs which arose from students' entrance into a system of individualized education had to be resolved first before students could participate in other specific guidance and counseling programs within that system.

Specifying Alternative Strategies for Fulfilling Student Orientation Needs

The next step was to specify alternative strategies for meeting the orientation needs and achieving the instructional objectives in the priority areas. The variety of learning strategies which could have been employed in the orientation to an individualized educational system included audiotapes, videotapes, films, reading, teacher or student demonstration of instructional equipment and materials, group discussions, individual planning sessions with teachers, practice sessions for the performance of skills important in the system or program, and lectures. A plethora of strategies were considered in order that the best strategies for orientation could be chosen.

Different strategies of orientation were also generated for the more specific guidance and counseling programs which composed part of the comprehensive career guidance system. Two such orientation programs were developed, one for a personal and social development program, and one for an educational-vocational program, both of which are described in more detail in Chapters V, VI, and VIII. These orientations were necessary in order to familiarize students with these particular guidance programs and to acquaint them with the purposes and values of participating in such programs. Once again, a wide range of strategies was

considered so that the ones predicted to be most effective could be chosen. When a wide range of strategies is available the probability of being able to match the characteristics of the student with the most appropriate strategy is greater.

Selecting, Designing, Scheduling, and Implementing Strategies

In the orientation to an individualized educational program, printed instructional units were used to organize the instructional and counseling strategies for students. Each unit contained information and suggestions as to what students might do and use to achieve the instructional objectives of the orientation program. The specific strategies which were selected were: teacher and student demonstration of instructional equipment and materials, practice sessions for performance of the necessary skills, individual planning sessions with teachers, group discussions, and individual reading. The orientation objectives for this individualized program (Project PLAN) were requenced so that students proceeded from an introduction to the new educational program, to learning the specific behaviors needed to function in it, and through individual planning and scheduling of their work in each subject area. Both the intermediate and secondary levels of this program included a discussion of the nature of Project PLAN, explanations of the terms used in Project PLAN, discussions of the use of module and placement tests, instructions on planning and challenging programs of studies, and directions on completing a contract for each PLAN subject.

The strategy selected for student orientation to the Personal and Social Development Program (PSDP) of the comprehensive career guidance system was a written presentation in the form of a booklet and was accompanied by a group discussion. Two orientation booklets were prepared for all participating intermediate level students. The first booklet entitled "Managing Your Behavior" has the following instructional objectives:

Step 1 OBJECTIVE: You will be able:

a. to explain what "managing your behavior" means;

b. to tell what kinds of things can be managed; and

c. to tell what things are involved in managing behavior.

Step 2 OBJECTIVE: You will be able:

a. to identify examples of students managing their own behavior;

b. to tell which students in a group are managing their behavior successfully; and

c. to give examples of a student managing his behavior successfully.

Step 3 OBJECTIVE: You will be able:

a. to identify at least one step a person usually takes to make sure he manages his behavior successfully;

b. to choose from several plans the one which should bring the best results for a person who faces a problem; and

c. to identify the results of a behavior for the person who acts and for the other people involved.

The second PSDP orientation booklet, "Personal Problem Solving," contains these instructional objectives:

Step 1 OBJECTIVE: You will be able:

a. to define the term "personal problem," and

b. to explain how problem-solving skills can help you manage your behavior.

Step 2 OBJECTIVE: You will be able:

a. to list and define five key problem-solving skills, and

b. to understand how these skills can be applied to a scientific problem.

Step 3 OBJECTIVE: You will be able to understand how to apply problem-solving skills to a student's problem.

Step 4 OBJECTIVE: You will be able:

a. to explain at least two areas of student behavior that are considered in the Personal and Social Development program.

b. to identify the two kinds of booklets written for each area of behavior, and

c. to decide if you want to begin work on a special learning activity booklet after you review your behavior record with your teacher.

Orientation to the Personal and Social Development Program is also provided for all students at the secondary level. The first orientation booklet, "HSSST: What's It All About?" is given to each student prior to his participation in the assessment techniques and performs a vital role in this program. It explains what the sutdent will do, the purpose of the assessment techniques and what he can gain by participating. Following his participation in this first part of the orienation program, the student should be ready to take part in the High School Social Situations Test (HSSST) itself and understand the reasons for his doing so.

In "Chance to Change," the second orientation booklet at the secondary level, each student: (1) learns what behaviors he performed during the assessment, and then, on the basis of his experience, adds to or modifies these data; (2) thinks about the consequences of his behavior; (3) learns about his four alternatives for behavior change (i.e., produce a desirable behavior not currently in his repertoire, maintain or perform more often a desirable response he has already learned, perform less often or eliminate an undesirable behavior, or not work on his behavior); and (4) using his assessment data, decides what alternatives for behavior he would like to try. Thus, following his participation in the second phase of PSDP orientation, the high school student should be able to interpret his results from the assessment portion of the program and be able to make a decision about what behavior modification alternative he will pursue.

Films, group discussions, and individual reading were the strategies which were selected for the orientation to the educational-vocational guidance program of the comprehensive career guidance system. These strategies are contained in self-instructional units which are designed to enable students to become familiar with (1) the nature of educational-vocational goals, (2) new operational and organizational procedures employed in a guidance and counseling program like this which is embodied in an individualized setting, and (3) new terms which are used in this particular guidance program. These three points are made in a booklet which the students read and which is accompanied by writing activities and exercises. Two films are also presented as a part of this orientation unit. The final orientation activity involves each student in a personal conference with the teacher. At this conference the teacher answers any questions the student might have regarding the new procedures he is about to experience in the guidance program, and also assists the student in the selection of the particular educational-vocational instructional objectives on which he will work.

The three orientation programs which have just been described are implemented within the classroom during the school year. The orientation to an individualized educational system takes place immediately at the start of the school year. All students begin working on the program at approximately the same time but the units are individualized so that each student may work through them at his own rate and not be held back or hurried by the rest of his classmates. The self-instructional nature of the program also makes it possible for new students who enter the system during the year to be properly oriented to it. The other two orientation programs are also of a self-instructional nature.

Evaluating Strategies and Providing Feedback and Correction

In order to provide feedback to students, teachers, and parents on student achievement of the instructional objectives, and to provide information that would help in refinement of these orientation units and identification of additional student learning activities related to these objectives, criterion measures were developed to accompany each orientation unit. As was stated earlier, needs related to knowledge, attitude, and performance outcomes were identified, and criterion measures were developed to test all three of these.

Two types of knowledge tests were used to evaluate the effectiveness of the orientation to an individualized educational program: (1) orientation module tests which contained multiple-choice items and assessed the students' knowledge relative to the PLAN program after they completed their orientation booklets; and (2) orientation survey tests also composed of multiple-choice items, which were administered three weeks after the orientation program in order to check the subjects' retention and subsequent acquisition of knowledge. The guidance proficiency test which accompanied the orientation unit for the educational-vocational program also contained multiple-choice items designed to test the students' comprehension and knowledge. Similarly, the Student Reaction Sheets which followed the orientation activities of the Personal and Social Development Program presented knowledge questions.

The second type of criterion measure for the individualized education orientation related to attitudes and provided an important measure of the success of the orientation program, apart from its ability to impart knowledge and skills. Since one of the goals of orientation was to increase students' positive feelings toward themselves by helping them understand that the system was interested in helping their development, attitude items had to be included in order to measure the effectiveness of this aspect of orientation. An Opinion Survey was developed for the student orientation to the individualized educational system. This instrument attempted to measure students' expressed opinions toward the PLAN educational system and was administered three weeks after orientation. The possible effects of response set were counterbalanced by phrasing the statements so that to agree with some would represent a favorable opinion of PLAN, while agreement with others would represent an unfavorable opinion of PLAN. Degree of agreement or disagreement on a four-point scale (to force a decision in one direction or the other) was requested. In a similar way, attitude items were also used to determine the effectiveness of the orientation to the Personal and Social Development Program. Here the students were asked to give their opinions on how interesting, realistic, and helpful the booklets were, and to list any suggestions they had for improvements in the program.

Finally, performance criterion measures were developed. An important aspect of any evaluation is whether or not students can actually perform the responses required and considered appropriate for their functioning effectively in the system or program to which they are being oriented. During structured interviews which followed the individualized educational orientation program, students were asked to perform behaviors which were necessary in order to function in a PLAN calassroom. For example, students were asked to fill in a computer card just like the one they would have to use later in PLAN classrooms in order to record their instructional test answers. Another performance criterion measure involved the maintenance of precise records regarding the amount and quality of each student's academic performance. Performance criterion measures were particularly important in testing the effectiveness of student orientation experiences for the Personal and Social Development Program. Since student management of their own behavior is the key to this program, critical incidents of student overt responses were collected in order to measure the effect of the orientation program. These were collected by daily, spontaneous teacher and counselor observations, by student self-reports, and by peer evaluation of behavior change.

Experimental Investigation of the Effects of Orientation to Individualized Education

In order to evaluate the effectiveness of the student orientation experiences to the PLAN individualized educational system, a special evaluation study was designed and conducted. Two alternate forms of the orientation materials developed for this program were prepared; one form constituted a comprehensive program, and the other a brief orientation program. One of the two major ways these versions differed was in the amount of information and behavioral practice included; the brief version was substantially less complete than was the comprehensive version. For example, students in the brief orientation program had fewer opportunities to practice operating audio-visual equipment and to participate in group discussions of various aspects of the educational program. A second difference between these two versions was that the brief approach allowed each student less involvement in planning and decision making relative to his academic work. For example, the teachers of the students in the brief program specified the type and amount of work each student would try to complete later in his basic curriculum areas of study, while the teachers of the students in the comprehensive program met with each student to discuss the type and amount of work each student would try to achieve. The comprehensive orientation program consumed, on the average, about five days of student time, while students completed the brief program in two days or less.

It was hypothesized that students who participated in the comprehensive orientation program would perform better in the system, have more knowledge of, and more favorable opinions toward, the system than would students who participated in a brief orientation program where the amount of information provided and student practice and involvement allowed was reduced to that which was deemed absolutely essential. In order to investigate this hypothesis in an experimental setting where statistical results could be achieved, 114 ninth-grade students from two schools and 165 fifth-grade students from four schools were randomly assigned, regardless of sex, to either the comprehensive or the brief orientation program. It was impossible to implement an inactive control treatment because teachers refused to withhold all orientation assistance from some of their students. Such refusal might be ascribed to their observations of the deleterious effects of no student orientation experiences during the previous year. Similar negative reactions were received regarding possible pre-treatment administration of criterion measures. Since there was a reluctance to greet students with a series of tests immediately upon their return to school in September, no pretest data were collected at that time. Therefore, the study's design had to rest upon previously gathered information on PLAN students' orientation needs, random assignment of subjects, and analysis of variance statistics on post treatment data only.

With the help of research assistants and printed guidelines, each PLAN teacher administered the two treatment procedures without informing the students that an experiment was being conducted. Because students in any PLAN classroom seldom work on the same materials, there were no problems in introducing two sets of orientation materials. Criterion measures were developed to relate closely to the student orientation objectives adopted for the individualized educational system within which this study was conducted. Nine criterion measures,

similar to those mentioned earlier in this chapter, were formulated for this study and each dependent variable was keyed directly to at least one instructional objective. The details of this study are described elsewhere (Jones, Kratochvil, Nelson, and Stilwell, 1969; Nelson, 1970).

Results of the orientation study provided little supporting evidence for the original hypothesis that students who participated in a comprehensive orientation program would perform better academically, have more knowledge of the educational system, and have more favorable opinions about the system than would students who were exposed to the brief orientation program. Students in the comprehensive orientation program actually performed better than students in the brief orientation program on only the two tests which reflected students' knowledge of the school system immediately after they completed their orientation activities. On all other comparisons of all students in the two programs, there were no differences on any other criteria.

The lack of evidence supporting the major hypothesis may have been related to several of the following factors. While there were extensive subjective data on which to base a belief that PLAN students had specific orientation needs, no objective measure of each student's needs was administered as a pretest device. If the orientation needs of PLAN students were different in kind or intensity from those anticipated, differential effects due to the amount or comprehensiveness of orientation perhaps should not have been expected. It is also possible that the amount of orientation, as depicted by the comprehensive program, was more than necessary. Perhaps the assumption that "the more information (or practice) the better" is not true with respect to orienting students. The best orientation program might be the one that provides each student with "just enough to get going in the system" and then allows the student to learn by performing in the system.

A number of confounding variables resulting from some of the constraints within which this study had to operate could have contributed to the lack of differential results between the two treatments. Since the students in the comprehensive and brief orientation programs were in the same classrooms, students in the two groups could have learned from one another, therefore confounding the effects of the treatments employed. Furthermore, the teachers may not have performed as the research design required. For example, they may have conducted group discussions in which material that was designated for only the comprehensive program was covered with all the students. Or, students in the comprehensive program may not have participated in all the activities designated for their orientation program. Research assistants attempted to monitor teacher implementation of the research design but were unable to control and to correct all deviations.

One of the implications of this experiment is that in order for more knowledge to be gained about the process and effectiveness of student orientation programs, future investigations must refine and improve their design and procedures. Few previous studies, for example, have included a true control group. In the case of this Project PLAN investigation, there was considerable resistance on the part of the teachers to withhold orientation assistance from some students. This resistance was due in large part to a strongly held belief that students all desperately needed an orientation program. There is no opposition to such

sincere concern for the students involved but it seems clear that under circstances where control groups are not available, no definitive answer can be obtained regarding the effectiveness of a given orientation procedure. Thus, ways must be devised to insure inclusion of valid control groups in such studies, perhaps by promising orientation assistance to the control group students following completion of the investigation.

A second inadequacy in orientation investigations is insufficient data concerning both the student characteristics and responses required for success in a particular educational system or guidance program and the specific orientation needs of the particular students to be served. That is, not only must the educational or guidance innovation and setting be closely studied in order to ascertain just what student behaviors and other characteristics are needed for them to function effectively, but each student must be assessed with regard to each of the behaviors and characteristics selected as necessary for youth. Only in this manner can the specific orientation needs of each student be identified.

Also, concern must be directed not only toward an analysis of the innovational system or program in question but also to a similar analysis of the setting in which the innovations operate. Some students who possess sufficient knowledge and skill to succeed in an innovative system or program might flounder due to some factors operating not in the instructional system per se but due to variables incorporated in the setting in which the system or program functions. Another area for improvement in orientation studies involves clearer designation of meaningful variables and formulation of precise and appropriate criterion measures. Criterion instruments in orientation studies customarily have been weak. Often these studies have employed only one or two measures which usually have been subjective reports from students and staff. In the orientation programs developed in the project described in this report, criteria were keyed rather precisely to the instructional objectives of the orientation materials. As the knowledge, behavioral, and attitudinal outcomes needed by students to succeed in educational settings, systems, and programs increase in number and complexity, the necessity for clearer relationships between orientation needs, instructional objectives. and criterion measures becomes more and more crucial for determining meaningful answers to orientation problems and for the development of more effective and efficient orientation programs.

Current Status and Plans

The investigation of the orientation to Project PLAN provided useful feedback for the further development and modification of that program. Because the study provided no clearcut evidence supporting the comprehensive version over the brief version of the materials, the PLAN orientation units were somewhat reduced in length. It was felt that an orientation program which was just as effective as the previous program could be provided without absorbing as much student time. Similar experimental investigations of the orientation units for the Personal and Social Development Program and the Educational-Vocational Development Program are being planned. It is hoped that these studies will facilitate the modification and improvement of these orientation units, and that the studies will also provide useful information for the development of

additional orientation materials. As new guidance and counseling programs are developed and incorporated into the Comprehensive Career Guidance System, accompanying orientation units will also be developed in order to enhance the effectiveness and usefulness of those programs. The three types of orientation experiences which were discussed at length in this chapter have been, or will be, implemented in schools during the 1970-71 school year. It is assumed that these orientation activities greatly assist students to acquire the various kinds of information, understandings, overt behaviors, and attitudes that students need in order to function successfully in school settings, systems, and programs. Continued evaluation efforts will be conducted to investigate that assumption.

APPENDIX--CHAPTER IV

Catalogue of Available Materials

1. AIR* developed orientation materials designed for an Individualized Educational System.

   Project PLAN Orientation

   Students' Guide to Project PLAN

   Preparing a Program of Studies, a Schedule, and a Contract

   Student Opinion Survey

   Orientation Survey Test

   For more information write to: PLAN
   Westinghouse Learning Corporation
   2680 Hanover Street
   Palo Alto, California 94305

2. AIR developed orientation materials for a Personal and Social Development Guidance Program.

   Part I Managing Your Behavior

   Part II Personal Problem Solving

   HSSST**: What's It All About?

   Chance to Change

3. AIR developed orientation materials designed for an Educational-Vocational Guidance Program.

   Getting Started

   For more information about materials listed under items #2 and #3, write to

   Guidance Research Program
   American Institutes for Research
   P. O. Box 1113
   Palo Alto, California 94302

*American Institutes for Research
**High School Social Situations Test

CHAPTER V

COMPONENT NO. 2--PERSONAL ASSESSMENT

The Comprehensive Career Guidance System proposes to assist students in preparing for life roles and activities that will be meaningful and satisfying to them. Instructional procedures include providing students with information about the requirements for (and the probable consequences of selecting) a wide variety of alternatives, with opportunities to assess their talents in relation to these alternatives, and with assistance in formulating their educational and life goals in light of this information. Students participate in the planning of an educational program that is relevant to their personal goals, and learn to manage their educational development so as to be able to assess their progress toward achieving these goals. The chief purpose of this chapter is to describe the uses made of personal assessment information in this guidance system.

Identifying Student Personal Assessment Needs

Information now becoming available from long term follow-up studies of high school students suggests that many individuals are confused by the kind of continuous career planning and decision-making required today and desire more assistance. For example, in Project TALENT's recent survey of students one year and five years after they graduated from high school, the students were asked to evaluate their high school experience (Flanagan, 1966). Approximately 25% of the students in each class pointed to "guidance and counseling" as the most crucial unmet need in their high school education. How to prepare young people to cope with personal and environmental change is an educational problem for which there are few, if any, ready solutions. It would seem that students need to understand "where they are" in terms of their own characteristics, the levels of these personal characteristics that are required in various career opportunities, and some of the methods they can use to develop themselves in relation to particular personal assessment variables so as to increase the likelihood of their achieving long-range career goals.

Further support for the statement that students have needs for accurate information on the patterns of individual differences predictive of career choice comes from recent reviews of career development theory and research (Holland and Whitney, 1969; Osipow, 1968). For a student who is exploring possible career goals in the areas of education and occupations, just to know that his score on a test of quantitative ability places him at a certain percentile rank (according to national norms) does not help him very much in making decisions such as whether to take a particular high school course or to select a certain post-high school occupational training program. Rather, he must be able to connect such items of information with some of the available alternatives and make thoughtful interpretations of their predictive powers in order to make the personal assessment data

meaningful. While prediction information is limited by the amount of stability in the follow-up sample, it can serve as a useful gauge for a student who is struggling with such questions as, "What are my chances of success in entering or succeeding in this occupation?" If a student is not like people in a particular occupation or not like people who have been accepted at a certain college, he still has some control over choices that will determine how similar or different his performance will be from previous students. He has the option of changing to be more like those people (in terms of the measurement data), changing his occupational or educational goal, or going ahead toward his original goal with the knowledge, at least, of some of the difficulties which might impede his success.

Student personal assessment needs were identified through an extensive review of follow-up studies, of research in career development, and of current guidance programs and systems. Then, data on the needs that students have for understanding their present developmental status in relation to available career alternatives were translated into a bank of instructional objectives. Instructional objectives in several career content areas are sampled below.

Educational-Vocational

The following instructional objectives and related student outcomes illustrate those that were developed in the educational and vocational domains.

OBJECTIVE: To understand the manner in which particular kinds of information about you might cause you to select various educational and vocational goals.

Student Outcomes:

1. Classify examples of five important factors you should consider when you think about your future educational and vocational goals.
   a. abilities
   b. interests
   c. values--things that are important to you in any job or education and training situation
   d. physical attributes (how you look and how healthy you are)
   e. how you act in different personal and social situations

2. Identify examples of these five factors after studying a description of another student.

3. Explain how each of these five factors might influence the selection of a student's educational and vocational goals.

OBJECTIVE: To summarize what you are now like (in relation to various educational goals) in terms of: your developed abilities, your interests, the things that are important to you, your physical attributes, and the way you act in different personal and social situations.

Student Outcomes:

1. Summarize (on a Personal Assessment Summary) the following information in relation to various educational goals:
   a. your abilities as assessed by you, by your grades, and by the Differential Aptitude Tests;
   b. your interests as you express them, and as measured by the PLAN Interest Inventory;
   c. your values as you express them;
   d. your physical attributes as you and the school nurse assess them;
   e. your personal and social behaviors as you assess them.

2. Demonstrate the accuracy and relevance of this summary in conferences with one of your parents or guardians, and with one of your teachers or your counselor.

OBJECTIVE: To demonstrate that certain things about you will (or can) change, and that such changes may affect your chances for participating in and successfully completing various educational and vocational activities.

Student Outcomes:

1. Identify major kinds of personal characteristics.

2. Accurately judge how difficult it is to change specific characteristics.

3. Indicate the effect a change in a particular personal characteristic has upon an individual's educational and vocational plans.

OBJECTIVE: To update information on what you are like, and to relate it to tentative post-high school educational and vocational goals you have been thinking of exploring.

Student Outcomes:

1. Summarize on a Personal Assessment Summary the following information in relation to two tentative post-high school goals (one educational and one vocational) you have been thinking of exploring:

   a. any changes you think you have made in your abilities since you took the Differential Aptitudes Test;
   b. your interests as you express them, and as measured by the PLAN Interest Inventory which you recently took;
   c. your values as you express them, and as measured by the Work Values Inventory;
   d. your physical attributes as you assess them; and
   e. your personal and social behaviors as you record them.

2. Evaluate these educational and vocational goals (during conferences with one of your parents or guardians, and with one of your teachers or your counselor) by:

   a. pointing out possible positive and negative outcomes of your exploring and perhaps pursuing these goals;
   b. stating how desirable these goals are for you;
   c. indicating what objective support you have for pursuing these goals; and
   d. estimating your chances of attaining these goals if you selected them.

OBJECTIVE: To understand the concept of individual differences, and the different ways that people can and do change.

Student Outcomes:

1. Identify four ways people differ, and at least one example of individual traits based on each of these ways people differ.

2. Define heredity and environment, and indicate whether specific traits are mainly a result of heredity or environment.

3. Identify traits which can and cannot be changed easily.

4. Choose which individual traits can be changed more easily than others and identify ways a given trait might be changed.

5. Indicate the difference between physical and mental measurement.

Personal-Social

The following instructional objectives define the behaviors on which students assess themselves in their personal and social need areas.

OBJECTIVES:

1. To deal effectively with difficult situations (e.g., when the student fails, is teased or criticized).

2. To carry through on assigned and agreed-upon tasks with responsibility and effort.

3. To show independence, initiative, and originality when faced with unexpected situations or special needs.

4. To show strength of character and integrity toward work and in dealing with others.

5. To show consideration for others' feelings.

6. To contribute to group interests and goals.

7. To deal effectively with rules, conventions, and teacher suggestions.

8. To function effectively in a leadership position when in a small group or with another student.

Citizenship

Although personal assessment objectives have not been specified in the citizenship area, previous efforts by the National Assessment of Educational Progress staff provide a very promising foundation. A joint effort by the Social and Educational Research Program at American Institutes for Research and professional and lay committees has resulted in a bank of objectives encompassing a wide range of citizenship understandings, attitudes, and performances. This bank of objectives would provide a useful starting point in the development of objectives requiring students to assess their personal status relative to a variety of citizenship responsibilities and activities.

Classifying Objectives by Commonalities and Assigning Priorities

An attempt to find commonalities among the various personal assessment needs and related objectives resulted in the five following major groupings classified according to the type of personal characteristics involved.

Developed Abilities

These are personal skills, developed or learned by individuals, that relate to what they can do. People's abilities differ mainly because they have spent more time or effort developing some of their abilities than other people have. For example, if a student spent a lot of time and worked hard on his mathematical ability and not much time or effort on his mechanical ability, he would probably complete his schooling with greater mathematical ability. Abilities, however, can change. If a student does not have all the abilities required for a certain goal that he wants to reach, he has the options of working to develop those abilities, changing his goal, or going ahead with the knowledge that it might not be very likely that he will attain this particular goal.

Interests

These are activities that individuals like to do. An important question is: How are interests distinct from abilities? Most people are interested in the things they do well, in their areas of high ability. But sometimes a person likes to do something such as repairing motors but does not do it very well. He probably has low mechanical reasoning ability despite the fact that the activities involved in working on motors truly fascinate him.

Values

These are the key satisfactions that an individual seeks, the things that are important to him. They relate to the highly personal question "What do I want?" They are the things that usually influence how an individual acts, what he chooses to do and how hard he works at it.

Physical Attributes

This group includes such variables as physical appearance, health, physical handicaps or limitations (e.g., hearing, seeing, or speaking problems), and physical structure (e.g., height, weight, strength, muscle coordination, and endurance).

Personal and Social Behaviors

The final group of factors which might influence a person's goal selections are the ways he acts when he is by himself or with others. It is useful for someone to know how he usually acts in personal and social situations that might frequently occur if he pursued certain goals. If a

student were considering an opportunity to work as a volunteer recreation leader at a settlement house in an urban ghetto, he probably would want to assess his own skills in performing social behaviors such as "considering the feelings of others."

These five behavioral categories of student personal assessment needs can be viewed as interfacing with the six content areas of student needs which were described in Chapter III.

Specifying Alternative Strategies for Fulfilling Student Personal Assessment Needs

In recent years a number of guidance related instructional and counseling strategies, designed to help students reach specific personal assessment objectives, have been developed and tried out. For example, in Project PLAN the personal assessment program has emphasized the design of ability and interest measures which will provide data for student and parent long range goal planning (Dunn, 1970). Three instruments, an 18-scale Developed Abilities Performance Test, a 30-scale General Information Test, and a 12-scale PLAN Interest Inventory, have been developed along with related biographical and self-description instruments to provide students with information about their levels of ability, interests, and values. In PLAN, the terms intelligence and aptitude are not used. Typically, students and teachers have viewed these concepts as describing fixed limits for abilities, whereas in PLAN these concepts have been replaced by one which focuses on the student's developed ability to perform with respect to various types of activities (Flanagan, 1970 c). Each student must understand that his score on any test provides only a rough estimate of his present status, and that his performance with respect to any ability might be improved by special effort.

PLAN students are provided with additional information about the nature of individual differences, about principles of behavior change, and about the amount of an individual's effort that will be necessary to produce a specified amount of improvement in his level of performance on any given ability. To inform students of their present levels of ability in relation to requirements for jobs typical of broad occupational groups, Project TALENT data, based on the reports of the career plans of students who are five years out of high school, were organized into profiles and then presented in booklet form. Close study of these booklets permits young people to evaluate their abilities in relation to those who enter various careers.

Another personal assessment program was developed by this project's staff for the Santa Clara Unified School District in California. In contrast to Project PLAN which employs a computer to store student test data, this alternative strategy has each student collect his own personal assessment information and record it on a large "Personal Assessment Summary" chart. The program focuses on current student personal assessment information in five previously mentioned categories: (1) developed abilities; (2) interests;

(3) values; (4) physical attributes; and (5) personal and social behaviors. The Differential Aptitudes Test Battery, the PLAN Interest Inventory, the Work Values Inventory, and other related self-report instruments were identified as personal assessment instruments both appropriate and available to Santa Clara students. The general aim of the program is to help students understand what they are now like in relation to possible education, training, and job-related opportunities in the worlds of education and work.

These personal assessment programs developed at the American Institutes for Research emphasize measured abilities, and both inventoried and expressed interests and values. An alternative approach is found in the Self Appraisal and Assessment Structure (SAAS) (Ostrom, 1969) which stresses student self-assessment of ability levels related to broad occupational fields. SAAS is comprised of a group of self-rating scales presented to students in a handbook format. Its overall instructional aim is to stimulate students, as a consequence of making and then examining their various self-ratings, to start thinking about the probable consequences of selecting and pursuing various broad occupational goals.

Thus far, the discussion of alternative instructional and counseling strategies has concentrated on personal assessment programs in the educational and vocational areas of student needs. The staff of this project also used the Personal and Social Development Program (PSDP) which employs behavior assessment procedures in the areas of learning behaviors and interpersonal development. Students, teachers, and counselors gather information on student performance in such behavioral areas as "carrying through on assigned and agreed-upon tasks" by means of two personal assessment strategies that employ the critical incident technique (Flanagan, 1954). Both strategies, the Performance Record being tried at the intermediate level and the Social Situations Tests (Flanagan, 1962) that are being studied at the secondary level, are direct and factual approaches in which opinions, generalizations, and ratings are reduced to a minimum by having observers record the incidence of specific overt behaviors. The overall aim of the PSDP is to assist students in assessment and self-directed change of particular learning and social behaviors.

Also in the academic-learning content area, another set of personal assessment strategies involving observational techniques was used by project staff in order to help students to manage their learning activities in and out of the classroom. The purpose of these strategies and their related instructional and counseling activities is to enable youth to acquire and to exercise control over their learning activities. One group of these strategies uses self-observation and evaluation. One strategy necessitates that each student keeps records of the rate and quality (or accuracy) of his academic performance. These records are then used in individual or group counseling settings for "individualized scheduling"--each student is helped to plan his learning activities and schedule his working time, if his performance indicates he needs this type of assistance. Two other strategies focus on students' study problems. Study skills assessment techniques attempt to measure what the student thinks he *can do*, while study performance instruments concentrate on what he identifies that

he *does do*. Many survey tests of study skills are available. Therefore, project staff members have concentrated on performance assessment procedures.

On the Time Evaluation Form, the student identifies the types of daily activities in which he participated for a week or more. This technique attempts to get him to compare the amount of time he spent studying with the amount of time he devoted to other activities. For more specific assessment purposes, the Study Effectiveness Form requests that the student make a daily record of the frequency of each study behavior which he emits, time spent on each activity, and his evaluation (i.e., on a five-point scale) of the effectiveness of each activity. Another group of strategies capitalizes on interviews and systematic observations conducted by counseling personnel (i.e., teachers, counselors, administrators, etc.) in order to provide information which can be combined with students' perceptions and desires. In order to facilitate interviews and the recording of behavior observations, case study forms and observational checklists were developed. Most of the strategies noted in the last two paragraphs were used in the identification of specific students experiencing learning problems.

Not all personal assessment programs have been developed specifically for student, teacher, and parent use. Recent efforts by the National Assessment of Educational Progress staff to assess student (and adult) knowledge, attitudes, and performances related to citizenship objectives (NAEP, 1970) provide a promising base for the development of instructional and counseling programs. NAEP has already developed and field tested a bank of behaviorally explicit objectives and a set of exercises designed to assess student achievement of them. Moreover, each objective (and related exercises) has been identified as either appropriate for 9-year olds, 13-year olds, 17-year olds, 30-year olds, or for combinations of these age groups. However, inquiries must be made to determine whether these objectives and assessment exercises can be construed as being in the "public domain" and thus available to program developers. The Education Commission of the States has adopted a recent policy whereby NAEP materials will be made available to states school agencies after they have been released publicly. This will permit states to assess their young people by using the same evaluation materials and procedures used in the National Assessment project.

Selecting, Designing, Scheduling, and Implementing Strategies

The instructional and counseling strategies, selected for special attention in Component 2 of this project, emphasized the five previously described categories of personal assessment information: (1) developed abilities; (2) interests; (3) values; (4) physical attributes; and (5) personal and social behaviors. These five fairly discrete categories were selected (rather than fewer but more global labels, such as "self-concept") since each represented a specific type of personal assessment information shown to have been useful to individuals when generating, considering, and selecting alternative goals. In contrast with more fixed and unchangeable categories (e.g., intelligence and aptitude), the concept of developed abilities was selected principally because it suggests that abilities are to some extent under the control of the individual. To

provide students with information about the status of their own personal-social and learning behaviors prior to selecting particular self-instructional units, the Personal and Social Development Program stressed role enactment strategies drawing on results from laboratory studies of operant behavior. Since this project had neither the time nor the resources to develop prototype programs in all six content areas, strategies for helping students to obtain and to use personal assessment information relative to citizenship goals and objectives were not investigated.

A number of personal assessment programs that include both student objectives and related instructional-counseling strategies were organized into individualized guidance-related learning units, and put into practice. The typical method was to cluster 4-5 objectives requiring about 8-10 hours of student time. Each unit contained explicit directions to the student as to what procedures would be likely to help him attain each objective, and that there was a proficiency test to help him measure his achievement. This method, consistent with that used in Project PLAN, was designed primarily to facilitate the building of educational programs relevant to the career goals of individual students.

Accordingly, student personal assessment activities (e.g., learning about measured as well as expressed abilities, interests, and values in relation to the requirements of various career opportunities) were keyed to specific student objectives and organized into individualized learning units. Student outcomes, resulting from achievement of these personal assessment objectives, yielded information for the selection of each individual's long-range occupational goals. This tentative choice of a broad occupational family was, in turn, used to assign a program of school related studies for each student (Hamilton and Webster, in press).

Recently, a group of counselors and teachers from Santa Clara, California, reviewed this project's data bank of some 10-15 personal assessment objectives in the educational and vocational content areas. Subsequently, they chose four objectives to comprise a pilot developmental program for students in grades 7 through 12. Following the selection of priority objectives, alternative learning strategies were considered for each of them. Two criteria, anticipated instructional value and costs, were employed in making selections among these alternatives. Individualized learning units were then developed by keying previously selected materials and activities to particular student objectives and related behavioral outcomes. Specifically, these units:

1. present students with statements of particular objectives;

2. indicate what materials they should use and what procedures they should follow to achieve these objectives;

3. stipulate a setting in which they can perform the related outcome behaviors; and

4. help them to evaluate the extent to which they have met the objectives.

Table 2, which presents a guide sheet from one of the four personal assessment units in the Santa Clara pilot program, illustrates how this sequence was typically displayed for students. Although only a few strategies are represented in the two columns of this guidesheet, in principle any type of appropriate learning activity could be included as an alternate approach for helping students to achieve objectives similar to these. For example, student personal assessment oriented individual (or group) counseling sessions could be designed for listing as a learning activity wherever appropriate.

In the Personal and Social Development Program, students have a major role in the assessment of their own behavior patterns, especially during self-instructional orientation activities presented in instructional-counseling units like those just described related to general objectives discussed earlier in this chapter. The Performance Record (PR) was used by teachers and counselors at the intermediate level to collect information on behaviors considered critical in those aspects of student development related to the PSDP general objectives.

In this procedure, behaviors are classified into categories related to the first seven general objectives noted earlier and are of two types: Behaviors to be Encouraged (e.g., sharing with another student), and Behaviors to be Improved (e.g., laughed at the mistakes of another student). On the PR slips (which include spaces for student names, descriptions of critical incidents and dates), counselors and teachers record critical incidents of student behavior that they notice occurring spontaneously during the school day. Later, using the PR, they classify each incident into one of the seven categories of Behaviors to be Encouraged or Behaviors to be Improved. Then, on the basis of their experiences, students help to modify information teachers and counselors have gathered about their performance relative to these same objectives. With this information, students in consultation with counseling personnel later identify either a desirable behavior they want to encourage or produce (learn), or an undesirable behavior they want to improve or eliminate. These decision-making activities involve close counseling interaction between students and teachers or counselors. No attempt is made to force a student to participate in an instructional-counseling experience which he believes is not justified on the basis of his personal assessment data. This is similar to the counseling interaction which follows student and counseling personnel data collection on other types of academic-learning behavior investigated in this project. Student records of academic performance data and study responses, as well as counselor or teacher observational, interview, and case study information are reviewed during such staff-student interactions, sometimes involving small groups of students with similar assessment data. Out of these discussions can come decisions for subsequent prescribed learning experiences aimed at helping students overcome specific learning problems.

Another part of the PSDP involves the Social Situation Test (SST) which was investigated at the secondary grade levels. In this test, students progress individually or in small groups through a series of situations

TABLE 2

EXAMPLE PERSONAL ASSESSMENT GUIDANCE LEARNING UNIT

American Institutes for Research
Guidance Research Program

Santa Clara NDEA Project
June 1970

SKILL AREA 2
OBJECTIVE 3

WHAT? ME CHANGE!

OBJECTIVE: The purpose of this unit is to help you to:

demonstrate that certain things about you can be or will be changed and that such changes can affect your chances for participating in and successfully completing various educational and vocational activities.

EVALUATION: To help you make sure that you have achieved this objective you will be tested to see if you can:

a. identify major kinds of personal characteristics.

b. accurately judge how difficult it is to change specific characteristics.

c. indicate the effect a particular change in a certain personal characteristic has upon an individual's educational and vocational plans.

EXAMPLE: When you can answer correctly questions like the one below, you probably are ready for the test that follows this learning package.

Sid had worked hard to increase his ability to spell and to develop an interest in history. These changes in personal characteristics probably would:

a. make it more likely that he would be accepted in the apprentice bricklayer program.

b. increase his chances of success in a college liberal arts program.

c. not affect in the least his work in English.

d. decrease his chances of going into an occupation which requires a college education.

USE THESE MATERIALS	DO THESE ACTIVITIES
1. Booklet, *Everybody Changes*, American Institutes for Research, 1970.	1. Read Chapter I and take part in the activities which are outlined.
2. Booklet, *Everybody Changes.*	2. Read Chapter II and take part in the activities.
3. Booklet, *Everybody Changes.* Checklist of Personal Characteristics.	3. Meet together in groups of four or five with your teacher or counselor. Follow his directions for the activity entitled, "How Personal Characteristics Can Change." Also review the ideas you wrote down earlier for changing personal characteristics.
4. Booklet, *Everybody Changes.*	4. Read Chapter III and follow through with the exercises.
4. Audio-tape, *Case Studies in Change,* American Institutes for Research, 1970.	5. Study how changes in personal characteristics can affect the educational and vocational lives of people by studying the case studies provided on the tape. Point out what changed and how it affected the person's educational and vocational life and then share your answers in a group discussion.
6. Checklist of Personal Characteristics.	6. Investigate how changes in a particular personal characteristic would affect the pursuit of a particular educational or vocational goal. Make up a case study in teams of two. Include at least one change in characteristics from each of the six categories. Meet in groups of four to exchange case studies and discuss them.
7. Booklet, *Everybody Changes.*	7. Read Chapter IV and review for test.

When you have successfully completed the above activities, check with your teacher or counselor before taking the test which accompanies this learning package.

simulating real-life circumstances they might be expected to handle in or out of school. For example, students are asked to apply for a job, to plan a group discussion on a relevant topic, or to make arrangements for a class trip given several constraints. In each structured situation (some involving student actors) a student observer has a record sheet consisting of a list of critical behaviors he is to observe. When one of these behaviors occurs, he notes the student who performed it. Each behavior is coded as being either a Behavior to be Encouraged or a Behavior to be Improved, and then as being in one of the categories of general objectives previously described. The situations are run in two sessions of two hours each. Students who are participants in the first session become actors or observe in the second session, and vice versa.

Following the test, a discussion period is held that allows students to discuss what they considered effective and ineffective types of responses to each structured situation. In a "Chance to Change" booklet, each student then: (a) learns what behaviors he enacted during the assessment, and modifies these data based on his experiences; (b) considers the consequences of his behavior; (c) learns about four major alternatives for behavior change; and (d) using his assessment data, decides what alternatives to try for each of the five areas of personal and social development covered at the secondary level. On the basis of these decisions, each student chooses an appropriate self-instructional booklet he would like to use in changing his behavior. For each of the five general objectives or areas covered at this level, there is one instructional booklet on acquiring a Behavior to be Encouraged, one on maintaining a Behavior to be Encouraged, and one on improving a Behavior to be Improved.

Evaluating Strategies and Providing Feedback and Correction

The effects of a personal assessment program should be evaluated on the basis of whether each student's own needs are being satisfied, i.e., the extent to which students are achieving agreed-upon goals and objectives related to their personal assessment data. Alterations in group mean scores, even if significant, convey little information about individual behavior. What is needed are evaluation instruments and procedures capable of assessing each student's knowledge, attitudes, and performances related to his personal characteristics.

In this project, a variety of check-off procedures have been used to validate student achievement of objectives related to personal assessment data. For example, student self-reports (along with peer evaluations and teacher and counselor observations) have been employed in the Personal and Social Development Program to determine whether students can effectively take responsibility for assessing and modifying their own behavior. This project's Individualized Educational-Vocational Guidance Program used parent or guardian reports (in addition to teacher and counselor observations) to evaluate each student's understanding of the five categories of personal assessment information, as well as the accuracy and completeness of the data he recorded about his own personal characteristics.

Current Status and Plans

To date the Comprehensive Career Guidance System has developed various programs which provide students with opportunities to obtain and to evaluate information about themselves in five major personal assessment categories, and to use this information in selecting and managing their progress toward achieving objectives in four of the six content areas (Educational, Vocational, Personal-Social, and Academic-Learning). Plans are currently under way for developing and evaluating additional personal assessment strategies. For example, a program of personal assessment is being designed for a Houston, Texas, school with a large black population as part of a U.S.O.E. sponsored field test of the Comprehensive Career Guidance System. This program will include a systematic collection of data regarding developed abilities, interests, values, personal and social behaviors, and physical characteristics. Each student will be assisted to interpret such data and use it effectively in choosing both intermediate and long-range goals in various areas of his life, and in formulating specific plans for the attainment of those goals. Specific student objectives for this program in each of six grade levels (7-12) have been drafted. Approximately 100 objectives related to personal characteristics are currently included in the program. In addition, specifications for instructional materials and procedures which might be used to assist students in achieving these objectives have been drafted.

The U.S.O.E. supported guidance field test will conduct, as another of its activities, follow-up case studies of randomly selected groups of students to explore how the acquisition of personal assessment information subsequently influences a host of behaviors that have some bearing on personal life, school, and occupation. For example, these students should be asked about the extent to which they have continued to collect data on their personal characteristics and have used this updated information both in modifying previous goals where appropriate and in identifying and evaluating alternative options. Results from these case studies should help project staff to evaluate the extent to which personal assessment information has been useful to students in helping them to reach their personal goals.

APPENDIX--CHAPTER V

Catalogue of Available Materials

1. AIR* developed personal assessment learning units prepared for an individualized educational and vocational guidance program.

   Ways To Be Different

   Who Am I?

   What? Me Change!

   For more information, write to:

   Dr. Calvin D. Catterall
   Coordinator, Counseling and Psychological Services
   Santa Clara Unified School District
   1889 Lawrence Road
   Post Office Box 397
   Santa Clara, California 95052

2. AIR developed personal assessment instruments designed for a Personal and Social Development Program.

   High School Social Situations Test

   Performance Record

   For more information, write to:

   Guidance Research Program
   American Institutes for Research
   P.O. Box 1113
   Palo Alto, California 94302

3. AIR developed objectives for assessing citizenship competencies. For more information write to:

   National Assessment Office
   Room 201A Huron Towers
   2222 Fuller Road
   Ann Arbor, Michigan 48105

*American Institutes for Research

4. AIR developed personal assessment learning units for the guidance program in Project PLAN.

Individual Differences and Their Measurement

Interests and Values in Career Decision-Making

PLAN Student-Parent Goal Formulation

For more information, write to:

PLAN
Westinghouse Learning Corporation
2680 Hanover Street
Palo Alto, California 94305

5. Self Appraisal and Assessment Structure. For more information, write to:

Dr. Stanley R. Ostrom
1953 Colleen Drive
Los Altos, California 94022

6. AIR developed program for helping students to assess and to change learning behaviors through small group counseling.

Counselor's Case Study Form

Observational Checklist for Student Managed Performance

Checklist for Analysis of a Classroom's Learning Conditions

Time Evaluation Form

Study Effectiveness Form

For more information write to:

Guidance Research Program
American Institutes for Research
P. O. Box 1113
Palo Alto, California 94302

CHAPTER VI

COMPONENT NO. 3--PERSONAL CHOICE OPPORTUNITIES

A primary aim of the Comprehensive Career Guidance System is to assist each student to formulate personal goals that will serve to direct his performance both within and outside the school environment. To select (and to manage his progress toward achieving) both immediate and long-range goals, each student must have specific and accurate information obtained from reliable sources about the wide variety of personal choice opportunities available to him in all the life areas. For a student to be able to engage in planning, decision-making, and management activities wisely and independently (i.e., with minimal support from others), he should have the necessary information on his own characteristics and his environment to generate and consider alternative courses of action. These information requisites enable him to participate in "educated involvement" or "informed choice" relative to the various aspects (e.g., educational, personal-social, citizenship) of his career. The general purpose of this chapter is to examine the role that information about the requirements for, and the probable consequences of, selecting a wide variety of personal choice opportunities plays in this guidance system.

Identifying Student Information Needs

One of the main prerequisites of informed choice is the accessibility of a reliable supply of information. That is, to generate viable alternative solutions to a personal problem, an individual must be knowledgeable of a broad range of "possible" solutions. Specifically, each student must be able to obtain from reliable sources specific and current information relevant to the many and varied high school and post-high school options that are available to him in each content area of the guidance system. Each student should then be assisted to relate an appraisal of his own personal characteristics to information about aspects of career opportunities such as the ability and education requirements, and the conditions of work and study. Each option can be probed by the student for the extent to which it offers the kinds of personal and social satisfactions he seeks.

Too often in the past students who lack good information have either put off setting tentative long-term career goals or have made them based on contacts limited to such people as members of their immediate family and friends. As McDaniels (1968) has said, "youth are not too young to choose, only too poorly prepared to make choices." Interviewers of a representative sample of 10,000 high school graduates (Trent and Medsker, 1968) found that many reported not being prepared by their education to meet the demands of the adult world. They talked to their interviewers about needing further information about training opportunities so that they could find a job doing something that would satisfy them, and information about possible goals that would lead them toward greater personal fulfillment in their lives. Numerous surveys of student needs and follow-up studies (e.g., Bay, Preising, and DeJong, 1969; Donaldson, 1968; Flanagan, 1966) support this study's student interview data.

Student needs, regarding information about personal choice opportunities, were identified through an intensive review of follow-up studies, research literature on career development, and guidance programs and systems currently

ments of information needs were translated into behaviorally explicit objectives and student outcomes to serve as specifications for individualized guidance programs.

Educational-Vocational

The following objectives are sampled from the total of some 200 in the bank of educational and vocational objectives.

OBJECTIVE: To be familiar with several major sources of vocational and educational information and judge how accurate, reliable, and helpful certain pieces of information are.

Student Outcomes:

1. Identify several important sources of vocational and educational information.
2. Use appropriate techniques and methods for judging the accuracy, reliability, and relevance of an information source.
3. Use a variety of information sources to find particular items of information.

OBJECTIVE: To be familiar with the ways in which the availability and/or desirability of specific educational and vocational opportunities are being influenced by social, economic, and technological trends.

Student Outcomes:

1. Define the concept, "trend."
2. Identify current social, economic, and technological trends and recognize how they relate to vocational and educational planning.
3. List sources of information on these trends.

OBJECTIVE: To contrast the kinds of educational opportunities available to a high school graduate with those available to someone who has not completed high school.

Student Outcomes:

1. Describe the educational opportunities, including places where training may be obtained, which are available both to high school graduates and dropouts.
2. List the educational opportunities that are available to high school graduates.
3. List the educational opportunities that are available to a high school dropout.

OBJECTIVE: To point out the length of time it takes, the education needed, and the financial cost of reaching tentative long-range vocational goals.

Student Outcomes:

1. Tell what your present first and second choice tentative vocational goals are.
2. Identify some educational and training programs which would help you reach the goals you are exploring.
3. Estimate the length of time it will take to reach the goals you are exploring.
4. Estimate the financial cost of reaching the goals you are exploring.

OBJECTIVE: To point out different ways in which occupations can be grouped into families, and to classify some common jobs in your community into their correct occupational families.

Student Outcomes:

1. Recognize at least five different kinds of occupational family systems.
2. Given certain occupations, classify them according to their appropriate family within various occupational family systems.
3. Specify some of the most commonly held jobs in your local area.
4. Classify these jobs according to their appropriate family within at least two occupational family systems.

Personal-Social

The general instructional objectives and behavioral examples listed below illustrate some of the opportunities available to students for acquiring competencies for effective functioning both as an independent person and in small group situations. Students are helped to understand the meaning of these objectives and to decide whether or not they would like to explore personal and social development related to objectives like these.

OBJECTIVE: To carry through on assigned and agreed-upon tasks with responsibility and effort.

Student Behaviors:

1. Started assigned tasks promptly.
2. Carried out assigned task without reminder or support from others.
3. Did unusually thorough job on assigned task.

4. Continued beyond requirements of assigned or agreed-upon task.

5. Planned and completed a strategy or a schedule involving several tasks.

OBJECTIVE: To deal effectively with rules, conventions, and teacher suggestions.

Student Behaviors:

1. Protected public property when another was attempting to destroy it.

2. Took special care of the personal property of others.

3. Accepted responsibility and made immediate efforts to carry out teacher suggestions (e.g., to improve conduct, work, or health habits).

4. Encouraged another person to comply with rules or teacher suggestions in order to protect the rights and property of others.

OBJECTIVE: To show independence, initiative, and originality when faced with unexpected situations or special needs.

Student Behaviors:

1. Worked out satisfactory solution when faced by unfamiliar or unexpected situation.

2. Verbally demonstrated independent thinking in face of verbal opposition to his ideas.

3. Asked teacher or fellow student questions in an attempt to relate current content to previously learned concepts.

4. Sought additional work or asked to make up work that he could easily have avoided.

5. Volunteered on his own to try to learn a special skill which was not a required assignment.

Citizenship

As was described in the preceding chapter, the National Assessment Staff developed a large number of citizenship objectives and related exercises (covering a wide range of civic behaviors relevant to community living in a democratic society) in order to evaluate certain aspects of the educational progress of American youth. Several are listed below to illustrate the realm of citizenship opportunities open to students as perceived by National Assessment. They are age appropriate objectives the achievement of which indicates that an individual is able to "encourage ethical and lawful behavior in others."

OBJECTIVES: Age 9

1. To be aware of others' wrong actions, as well as their own, and warn others about breaking rules.

2. To refuse to participate in unethical group activities, such as conspiring to blame another child for their own wrong doing.

OBJECTIVES: Age 13

1. To be aware of others' wrong actions, as well as their own, and warn others about breaking rules.

2. To refuse to participate in unethical group activities, such as conspiring to blame another student for their own misdeeds.

3. To call attention to illegal or irresponsible acts (e.g., vandalism) and report accidents and injuries to parents, teachers, or authorities.

OBJECTIVES: Age 17

1. To inform others about laws and regulations, and praise or reward others for taking an ethical stand.

2. To not condone law breaking in others, and avoid tacit approval of friends' unethical or illegal behavior, calling attention to bad consequences and suggesting alternative actions.

3. To refuse to participate in unethical group activities.

OBJECTIVES: Adult (in addition to Age 17)

1. To show the disgruntled how to protest by open, lawful means rather than by covert defiance.

2. To oppose specific irresponsible acts of public officials by calling them to public attention, petitioning, or reporting to authorities.

Classifying Objectives by Commonalities and Assigning Priorities

Instructional objectives based on the wide variety of needs that students have for information on personal choice opportunities were grouped together initially according to their content. A brief description will follow illustrating several ways to further classify these kinds of objectives within three content areas: educational-vocational, personal-social, and citizenship.

Educational-Vocational

In Project PLAN, to give students a more coherent picture of the range of occupational opportunities, data from Project TALENT have been used to group occupations into 12 job families (Flanagan, 1970c). The TALENT data on 17

developed abilities scales are comprised of scores made by high school students who later were in the process of entering various occupations. The occupations in each of the 12 job families were originally grouped on the basis of the extent to which they involved similar educational requirements and kinds of work tasks. The profile of developed abilities for each occupation was then compared with both those of the other occupations in the group to which it was tentatively assigned, and to those in the other 11 groups. On the basis of this final step, a few classification changes were made to provide greater homogeneity among the occupations assigned to each of the groups.

These data, which provided the basis for establishing the 12 groups of long-range occupations goals, must be viewed as tentative since they are founded on the reports of the career plans of students who are five years out of high school. Individuals who had made little progress toward their career goals were not included. Most of the young people are either engaged in an occupation in an entry level job, or in professional training for this occupation. Though this classification scheme for occupations is tentative, the current data do enable young people to appraise their abilities in relation to the personal characteristics profiles of TALENT students who entered various occupations. The titles of the 12 occupational groups, representing a wide range of occupations in terms of educational and training requirements, are listed below.

1. Engineering, Physical Science, Mathematics, and Architecture
2. General, Commercial Service, Public Service
3. Medical and Biological Sciences
4. Business, Secretarial-Clerical
5. Business Administration
6. Construction Trades
7. Teaching and Social Service
8. Mechanics, Industrial Trades
9. Humanities, Law, and Social Sciences
10. Business, Sales
11. Fine Arts, Performing Arts
12. Technical Jobs

The Self Appraisal Assessment Structure (Ostrom, 1969), discussed briefly in Chapter V, presents students with an alternative approach for organizing large numbers of occupations into a limited number of broad occupational clusters. On the basis of tasks workers perform on the job, SAAS has sorted occupations into eight "fields": scientific, mechanical, clerical, computational, sales, social service, verbal, and the arts. In addition SAAS has

assumed that within each of the eight fields the particular occupations can be sub-divided according to the level of skills seemingly required. The four broad skill levels are listed below.

Jobs requiring:

1. little training and/or experience;

2. skill and/or experience;

3. education and/or training--"semi-professional;"

4. special education--"professional."

The result is an occupational classification system based on a two-way matrix: eight occupational fields by four skill levels. In Project PLAN, data from the TALENT five-year followup study were used to validate the 12 groups of occupational goals, a confirmation procedure not employed with SAAS' eight occupational fields.

A third approach to organizing educational and occupational information into a meaningful structure combines elements of those already discussed. It was developed by this project's staff for the Santa Clara, California public schools. Here, emphasis is placed on the fact that occupations can be sorted into broad clusters on the basis of many different criteria. Students are shown how occupations can be grouped according to various commonalities among them, such as the amount and type of schooling or training required, the specific tasks done in the occupation, and the benefits which are provided by the occupation. Then they are introduced to two vocational family systems (the Project PLAN system of 12 long-range occupational goal groups [discussed above] and the Dictionary of Occupational Titles [DOT] system) that seem to be organized in a manner that can be especially helpful to students when they are selecting educational and vocational goals. The DOT categories of occupations are: (1) professional, technical, and managerial; (2) clerical and sales; (3) service; (4) farming, fishery, forestry, and related occupations; (5) processing; (6) machine-trades; (7) bench-work; (8) structural-work; and (9) miscellaneous. By stressing two related though in many respects different methods of classifying educational and occupational opportunities, this program encourages students to understand not just how to sort occupations into large groups but also the varying selection criteria employed by competing systems.

Personal-Social

Instructional objectives for helping students to acquire, maintain, or encourage desirable personal and social behaviors were grouped into several categories:

1. Dealing effectively with difficult situations.

2. Showing strength of character and integrity.

3. Contributing to group interests and goals.

4. Showing consideration for the feelings of others.

5. Showing leadership.

6. Dealing effectively with rules, conventions, and teacher suggestions.

7. Carrying through on assigned and agreed-upon tasks.

8. Showing independence, initiative, and originality.

Citizenship

The National Assessment of Education Progress' stated purpose is to furnish concerned citizens and educators with reliable information about the extent to which people in this country are attaining certain educational objectives. The project's assessment activities are aimed only at those competencies which nationally representative panels of educators, laymen, and subject-matter experts agree are important for schools to help students achieve. The citizenship panels agreed to group a large number of specific objectives according to nine major citizenship aims. These following nine broad categories for objectives represent the best judgment of the panel as to the attitudes, understandings, and performances American youth need to demonstrate in order to function responsibly in democratic society.

1. Show concern for the well-being of others.

2. Support rights and freedoms of all individuals.

3. Recognize the value of just law.

4. Know the main structure and functions of government.

5. Participate in effective civic action.

6. Understand problems of international relations.

7. Approach civic decisions rationally.

8. Take responsibility for own development.

9. Help and respect their own families.

Specifying Alternative Strategies for Fulfilling Student Personal Choice Opportunity Needs

A variety of strategies for furnishing students with information about personal choice opportunities has been developed and tried out. These range across the different content areas of the Comprehensive Career Guidance System and include varying modes of presentation. The following discussion focuses on several strategies which illustrate those that have been developed in the educational-vocational and personal-social domains. Some of these strategies emphasize the presentation of information on many specific opportunities while others stress the general characteristics of groups of options.

In the occupational content area, several possible advantages can accrue to students when they study information about clusters of related occupations. First, when a student learns about an occupation that is representative of a particular occupational family, he is learning generalizations that apply to a number of other related occupations within the family. For example, when a student learns about the educational and training requirements for a mechanical engineer, the information probably would apply to numerous other kinds of engineers. Second, when a student begins to plan toward a general occupational cluster, he is meeting requirements for a number of related occupations as well, any one of which may eventually become his primary goal contingent upon a minor change in his plans. A student, for instance, might set a goal to become a medical doctor which would require certain educational decisions starting him off on many years of college and professional training. If along the way he decided to alter his goal of becoming a medical doctor, his chances would still be very good for finding a satisfying occupation in a related field, such as the life sciences. Studying generalized information about families of occupations, therefore, permits flexible and alternate planning on the part of students.

Project PLAN has integrated current information about 12 occupational families into each student's regular academic program (Flanagan, 1970a). Through written booklets and in some cases audio tapes, PLAN students are furnished information about conventional aspects of these occupational families obtained from such publications as the *Occupational Outlook Handbook* (and other United States Government materials) and from profiles of developed abilities based on Project TALENT data. Presented as an applied economics strand in the Social Studies program, the study of occupations is closely interwoven with the study of economics and contemporary problems. This permits using occupational information in connection with such subjects as ecology, urban problems, and industrial development.

The program of educational and vocational guidance in the Santa Clara, California schools includes a variety of learning strategies in addition to the reading and listening skills stressed in the Project PLAN guidance program. Activities include such techniques and sources of information seeking as: (1) observing films and film-strips; (2) reading and manipulating instruments included in job experience kits; (3) listening both to audio tapes and to classroom visitors describing occupations and various jobs in those occupations; (4) questioning teachers, counselors, and visiting speakers; and (5) writing letters to such sources of information as admission offices at colleges or training schools.

A growing number of computer-supported programs, providing students with access to large information banks of educational and vocational data, is currently being marketed within price ranges considered feasible for modern school systems. For example, Harcourt, Brace & Jovanovich Publishing Company offers a SELECT program which permits students indirect access to a data bank on four-year colleges. In this program, student inquiries are batched and answers are distributed periodically. Another approach, Interactive Learning Systems (ILS), enables students to have on-line computer-assisted access with immediate response to queries regarding national and local data of four types: occupational college, vocational-technical schools, and financial assistance.

The Santa Clara County Office of Education in California has developed a project illustrating a computer-supported approach, in which computerized listings of county-wide occupational opportunities are periodically distributed to local schools. This program lists all entry-level jobs in certain county industries and businesses which have volunteered to provide the following types of information about each job: (1) educational and training requirements, (2) salary levels, (3) primary work tasks, (4) present employment levels, (5) forecasted openings, and (6) position in the SAAS occupational classification system (Ostrom, 1969). Counseling offices in Santa Clara County schools are continually furnished with updated printouts containing current information provided by the local industries and businesses.

The national computerized Job Bank program, which disseminates information about immediate employment opportunities, illustrates an approach that is both computer-supported and oriented toward specific job openings (rather than clusters of occupations). The Job Bank uses a daily up-to-date computerized list of available jobs in a major metropolitan area to facilitate job placement of the unemployed, particularly the disadvantaged. Operational in 55 major cities under the auspices of the United States Department of Labor, the Job Bank has expanded the exposure of the applicant to job opportunities to the extent that in some cities the placements of hard core unemployed have as much as doubled.

Thus far, the discussion has emphasized alternative instructional-counseling strategies within the educational and vocational content areas. Brief mention should be made of the alternate strategies available to this project's Personal and Social Development Program. In this program, intermediate and secondary level students first learn about the range of desirable personal and social behaviors they might want to acquire (used at the secondary level only), maintain, or encourage and of undesirable behaviors they might want to eliminate. Students can then select specific behaviors to comprise their own, individualized behavior modification programs. Strategies for presenting the personal and social behavioral opportunities could have included such approaches as video-taped, filmed, audio-taped or written models displaying the various behaviors, lecture descriptions conducted by teachers and counselors, or group discussion and role play of the various behavioral alternatives.

Selecting, Designing, Scheduling, and Implementing Strategies

Several strategies for helping students to meet personal choice opportunities were selected for investigation in this project. Emphasis was placed on an instructional-evaluation unit approach in which various instructional-counseling strategies were grouped for presentation to the student. The method for implementing the Santa Clara educational and vocational guidance program involved individualized guidance units organized by first specifying student based objectives and related behavioral outcomes and then keying appropriate learning materials and procedures. The result was units that furnished explicit directions to the student as to what activities would probably help him to reach each objective, and what tests were available to aid him in assessing the extent of his achievement. Designed for students in grades 7-12, a given unit can be scheduled for students within any or all of the grade levels depending upon the needs of particular students, i.e., there is no fixed sequential order that should be followed in scheduling the units. Typically these units are implemented with students in either a self-instructional or a small group instructional setting. Table 3, on the next page, displays a guide sheet from one of the Santa Clara program units that focused on personal choice opportunities.

TABLE 3

EXAMPLE PERSONAL CHOICE OPPORTUNITY GUIDANCE LEARNING UNIT

American Institutes for Research
Guidance Research Program

Santa Clara NDEA Project
June 1970

SKILL AREA 2
OBJECTIVE 9

SORTING OUT OCCUPATIONS

OBJECTIVE: The purpose of this unit is to help you to:

point out different ways in which occupations can be grouped into families, and classify some common jobs in your community into their correct occupational families.

EVALUATION: To help you make sure that you have achieved this objective, you will be tested to see if you can:

a. recognize at least five different kinds of occupational family systems.

b. given certain occupations, classify them according to their appropriate family within various occupational family systems.

c. specify some of the most commonly held jobs in your local area.

d. classify these jobs according to their appropriate family within at least two occupational family systems.

EXAMPLE: When you can answer questions like the one given below, you probably are ready to take the test which follows these materials.

Tom, 16, is a 10th grader. Weekends he works as a gardener. He currently makes $1.50 an hour. From the four ways of forming occupational families which are listed below, select the one which has been mentioned in this example.

a. Amount of schooling or training required by the occupation.

b. Personal characteristics needed for success on the job.

c. Specific tasks done in the occupation.

d. The benefits which are provided by the occupation.

USE THESE MATERIALS	DO THESE ACTIVITIES
1. Booklet, *Making Sense Out of Jobs*, American Institutes for Research, 1970.	1. Read Chapter I, page 1; answer the questions, and check the answers in your booklet.
2. Booklet, *Making Sense Out of Jobs.* Audio-tape, *Vocational Families*, American Institutes for Research, 1970.	2. Listen to the tape and if you wish, read along in Chapter II of the booklet, page 3.
3. Booklet, *Making Sense Out of Jobs.* Audio-tape, *Getting Acquainted with Two Vocational Family Systems*, American Institutes for Research, 1970. *Our World of Work*, SRA, 1968 *Occupations and Careers*, McGraw-Hill, 1969.	3. Read Chapter III of the booklet, page 8, and the materials to which it refers you or listen to the tape. Meet with another student to test each other's knowledge of the DOT and IRG vocational family systems.
4. Booklet, *Making Sense Out of Jobs.*	4. Do the activity outlined in Chapter IV, page 14, of the booklet to learn more about how particular jobs fit into various vocational families.
5. Booklet, *Making Sense Out of Jobs.* Booklet, *Variety of Jobs Catalog*, American Institutes for Research, 1969.	5. Read Chapter V of the booklet, page 17, and do the exercises to familiarize yourself with the Variety of Jobs Catalog. Using the catalog and your interview materials, meet together to participate in the game outlined in Chapter V of the booklet.
6. Booklet, *Making Sense Out of Jobs.*	6. Read Chapter VI of the booklet, page 22, and carry out the activities to discover some occupations which are important in your local area.

When you have successfully completed these activities and materials, check with your teacher or counselor before taking the test which goes with this learning package.

Project PLAN employed a method similar to the instructional-evaluational unit approach selected in this project. In PLAN, teaching-learning units comprising information about personal choice opportunities in the worlds of education and work are sequenced across the primary, intermediate, and secondary levels and integrated into each student's Social Studies and Language Arts programs. In the primary grades (1-4), objectives emphasize: (1) the nature and variety of work in some of the specific occupations (e.g., community and personal services) that are usually visible to young students; (2) the patterns of social interaction usually found in job settings; (3) the functions that occupations have in fulfilling various social and economic needs; and (4) the general ways that people prepare for occupations. At the intermediate and secondary levels, teaching-learning units focus on the 12 occupational families discussed earlier in this chapter and on the nature of occupational opportunities typically available following graduation from high school--i.e., four-year colleges, two-year colleges, occupational training schools, apprenticeship programs, selective service, military service, and entry level jobs (Hamilton and Webster, in press).

A variety of strategies, selected for this project's Personal and Social Development Program, enables students to survey possible personal and social behaviors they might want to acquire, to maintain, or to encourage. Specifically, they experience orientation learning units, observe trends in their behavior, discuss such trends wich counseling personnel who have collected student behavioral data through the Critical Incident Technique (Flanagan, 1954) and, if they are high school students, they participate in the Social Situations Tests. In these latter tests, students participate alternately as actors or as observers in a series of situations simulating actual circumstances they might be expected to deal with satisfactorily either in or out of school. Self assessment is another technique used to familiarize students with opportunities in the PSDP. This technique relies on students responding to a checklist of all the personal and social behaviors emphasized in the PSDP. Because of production costs, audio-tapes and film techniques were not used in presenting students with information on personal and social development opportunities. Because of the individualized prescriptive nature of the PSDP, self-instructional booklet presentations, group discussions and role play were selected, at least for the first generation of this instructional-counseling program. No lectures were incorporated in the PSDP.

Evaluating Strategies and Providing Feedback and Correction

To measure the effects of information presentations about personal choice opportunities provided in an individualized system of career guidance, it is first necessary to determine whether the system enabled individual youths to meet their knowledge needs. A basic assumption here is that the greater amount of information youth have about available choices (regarding occupational roles, educational opportunities, leisure time activities, etc.), the greater is the meaningful data upon which they can make particular choices thereby increasing the likelihood that they will more wisely select appropriate long-range goals and develop realistic plans for attaining them. Few, if any, instruments are currently available that assess student knowledge of available opportunities (in a particular life area), attitudes toward having such information, and performances related to seeking such information. In view of this void, project staff developed and field tested two prototype instruments: the Educational and Vocational Exploratory Behavior Inventory (EVEBI), and the Occupational Knowledge Survey (OKS). No efforts were made to pursue a similar type of test development in the personal and social content areas because the emphasis there is on objectives stressing overt behavior patterns rather than knowledge.

Educational and Vocational Exploratory Behavior Inventory

This inventory measures student overt, self-initiated behaviors relevant to the gathering and processing of information for subsequent vocational and educational planning and decision making. The inventory is designed for student use in recording the number of information-seeking behaviors they report during a prescribed time period following the administration of an instructional-counseling program. It can be administered individually or in small groups. The instrument asks specific questions from seven broad categories:

1. Had they talked with any people about occupations, vocational education, or any other educational opportunities?

2. Had they requested any printed information, read any booklets, or watched TV or films related to vocational education or their occupational plans?

3. Had they made or planned to make any on-the-job visits?

4. Had they visited or planned to visit a campus or an area vocational center?

5. Had they looked into or planned to look into summer work related to their occupational or educational choices?

6. Had they made definite plans to take or had they taken any interest, ability, or achievement tests to help their educational-vocational decision making?

7. Had they changed their educational plans so that they were now signed up for an area vocational center or had applied to a college?

In a recent study (Ganschow, Stilwell, and Jones, 1970), a random five percent of the subjects' inventories were selected for objective confirmation after the inventories were completed. Of the 46 information-seeking behaviors reported by the subjects, 24 were verified and 17 were not verified. None were disconfirmed. Overall these verification results compared favorably with those reported earlier (e.g., Krumboltz and Thoresen, 1964; Hamilton, 1969; Thoresen, Hosford, and Krumboltz, 1970).

Occupational Knowledge Survey

The OKS was designed to assess the amount of knowledge which high school students have about the world of work in general; about broad occupational families; and about the present and future opportunities, the conditions of work, and the requirements of common occupations within particular occupational families. It was anticipated that one of this instrument's uses would be as a criterion measure for evaluating one aspect of the effectiveness of vocational guidance programs. Currently the OKS has four equivalent forms: two designed for girls and two for boys. Total administration time for each form of the survey is about 50 minutes.

The representativeness of the occupations and occupational families sampled

in the OKS was validated primarily by reference to: (a) the frequency with which each of a large number of occupations was selected and pursued by high school students participating in the five-year follow-up conducted by Project TALENT--the national longitudinal study of 440,000 students, and (b) estimates of occupational opportunities specified in the United States Department of Labor's 1968-69 *Occupational Outlook Handbook*. About two thirds of the items on each of the OKS forms sample students' knowledge of the 37 occupations listed in Table 4.

TABLE 4

OCCUPATIONS SAMPLED BY THE FOUR OKS FORMS

Accountant	Draftsman	Policeman
Advertising Worker	Electrical Engineer	Postal Clerk
Aircraft Mechanic	Forester	Psychologist
Bank Teller	Lawyer	Registered Nurse
Carpenter	Machinist	Retail Salesman
Chemist	Maintenance Electrician	Social Worker
Clergyman	Manufacturing Salesman	Teacher--Elementary
Clerical Worker	Mechanic	Teacher--Secondary
Computer Programmer	Medical Technician	Teacher--College
Cooks and Chefs	Nurse (Practical)	Tool and Die Maker
Cosmetologist	Pharmacist	Truck Driver
Dentist	Pilot	Truck Driver (Routeman)
	Plumber	

Table 5 on the next page presents the eight categories of occupational characteristics into which OKS items on these 37 occupations were grouped during item development activities. The remaining one third of each form's items include more general questions about the world of work and occupational families.

TABLE 5

CATEGORIES OF OCCUPATIONAL CHARACTERISTICS SAMPLED BY THE FOUR OKS FORMS

Occupational Duties	Working Conditions	Financial Considerations
Required Abilities/ Interests	Present and Future Opportunities	Sex Distribution
Education Required	Legal or Age Requirements	

After preliminary field tests and item revisions were accomplished, the OKS forms were administered to a total of 1498 ninth- and eleventh-grade students in three California schools, one Texas school, and one Maryland school. Student populations in the California and Maryland schools were predominantly White, while the population in the Texas school was predominantly Black. Basic data collected by this widescale administration are summarized in Table 6 on the next page where it can be noticed that reasonably high internal consistency estimates of reliability were obtained for each form--i.e., .82 and .80 for the two boys' forms and .77 and .78 for the two girls' forms.

In addition, 48 ninth-grade boys and 41 ninth-grade girls in one of the two California urban schools took both of the male and female forms respectively. Half of each student group started with one form, while the other half worked on the other form before they switched to the remaining alternate forms. Pearson Product Moment test--retest correlations of .67 for the boys and .65 for the girls resulted on each set of two OKS tests. Using background information on these same students, correlations were conducted between the OKS results and students' total scores on a recent administration of the Differential Aptitude Test. Resultant correlations for the two boys' forms were .65 and .69 and for the two girls' forms were .77 and .67.

The main evaluation purpose of the OKS is not to compare students' scores across grade levels within schools and within grade levels across schools as is so easily done by close inspection of the data in Table 6. Additional data analyses were performed in order to enable reports of what students actually knew about various categories of job characteristics (e.g., job situation [occupational duties and working conditions], background and prerequisites, and present and future possibilities--for selected occupations samples by the OKS). Such data will be reported for the various school populations and items representative of those contributing to the data in each category of occupations and characteristics will be provided. In this way as the alternate OKS forms are further refined in the future, when they are administered before and after students are exposed to vocational guidance units focusing on occupational knowledge outcomes, decisions will be possible about the effects of such units on specific categories of student knowledge. Tests using a rationale and format similar to the OKS also should be developed to assess student knowledge in other content areas (e.g., educational, leisure, and citizenship opportunities) of the Comprehensive Career Guidance System.

TABLE 6

N's, MEANS, STANDARD DEVIATIONS, AND INTERITEM RELIABILITY COEFFICIENTS ON FOUR FORMS OF THE OCCUPATIONAL KNOWLEDGE SURVEY

School Locations	Grades	FORM Ga				FORM Gb				FORM Ba				FORM Bb			
		N	$\bar{X}$	σ	KR-20	N	$\bar{X}$	σ	KR-20	N	$\bar{X}$	σ	KR-20	N	$\bar{X}$	σ	KR-20
California Urban District A	9th	45	33.47	6.45	.72	43	34.21	4.93	.51	45	31.42	6.06		45	29.53	4.70	
	11th	65	37.57	5.51	.63	61	36.11	7.46	.80	58	34.98	5.43		54	30.96	6.28	
California Urban District B	9th	45	31.77	5.92	.65	45	32.11	6.47	.71	52	27.92	8.25		52	24.90	7.71	
California Rural	9th	49	31.35	7.30	.77	51	30.12	7.53	.79	47	28.55	6.53		47	24.45	7.29	
	11th	44	35.80	7.32	.79	43	36.81	6.66	.76	46	27.70	9.13		43	24.98	7.77	
Maryland Urban	9th	66	32.52	6.97	.75	48	30.17	6.01	.67	58	29.50	6.35		37	24.32	7.77	
Texas Urban	9th	49	28.47	6.55	.71	53	26.09	6.07	.66	42	21.24	7.15		26	22.04	6.21	
	11th	44	29.95	7.45	.79	47	28.96	7.75	.79	34	25.53	7.92		14	20.64	6.03	
Totals		407	32.57	7.39	.77	391	31.77	7.53	.78	382	28.71	8.04	.82	318	25.42	7.34	.80
Range of Scores		11-49				1-52				4-45				8-41			

In addition to the tests described above (EVEBI and OKS), project staff developed a number of guidance proficiency tests to aid students in determining the extent to which they had achieved the objectives in particular guidance learning units. Proficiency test items were written explicitly to check on student performance of each outcome related to a unit's objective. An example proficiency test item, which was designed to assess a student's ability to "recognize at least five different kinds of occupational family systems" is displayed in Table 3. Using feedback from his performance on one of these proficiency tests, a student (along with his teachers, counselor, and parents) can identify the outcomes, if any, that he has not satisfactorily demonstrated. Then, the student can select additional learning activities where appropriate. A key assumption here is that a student ought not to proceed with another guidance learning unit until he has first adequately attained the objective-based performance levels specified in his present unit.

Current Status and Plans

A variety of recently developed instructional-counseling strategies related to the presentation of information about personal choice opportunities is being considered for investigation. Project staff are currently exploring competing methods for presenting students with up-to-date information on local entry level jobs as well as on immediate job openings. For instance, is making such information available via portable computer terminals that are linked to computerized data banks more effective with students than permitting them access to computer printouts containing similar information? In addition, project staff plan to examine the comparative effects of using alternative strategies for delivering information about occupations, education and training options, and the various means open to youth for financing post-high school education or vocational training. For example, does it make a difference whether students read from a teletyped message while seated at a portable computer terminal (e.g., ILS), read a magnified display of a micro-fiche card, read from a printed booklet, or observe a film, film-loop, or film-strip production? A host of techniques such as these for presenting students with current information about personal choice opportunities are commercially available but few of them have been empirically tested.

Plans are underway for expanding this system's evaluation strategies to furnish more adequate feedback to project staff thereby enabling them to make needed revisions in various programs. The Occupational Knowledge Survey (OKS) will be refined to insure that its items appropriately sample from the total population of items related to the world of work in general, to occupational classification systems, and to typical characteristics of common occupations within various occupational groups. A similar survey instrument will be developed for the education content area. Its purpose will be to assess student knowledge of the major kinds of educational institutions, of the common characteristics that differentiate these institutions, and of particular options that are representative of the different educational categories. In the personal and social content areas, further attempts will be made to evaluate the extent to which students understand the various types of behavior on which the PSDP is based and to determine their attitudes toward such behaviors. An example technique is to have students listen to audio-tapes in which individuals enact behaviors emphasized in the PSDP. Afterward students answer questions designed to assess their knowledge of, and attitudes toward, the behaviors enacted in these taped situations. The ultimate aim of these and other planned efforts is to study the effects of particular instructional-counseling strategies with certain individuals and to collect information that will yield a prescriptive system of strategy-student characteristic matching.

APPENDIX--CHAPTER VI

Catalogue of Available Materials

1. AIR* developed learning units prepared for individualized educational and vocational guidance programs.

   The Information Explosion

   Social, Economic, and Technological Trends

   Dropout

   Reaching Your Vocational Goals

   Sorting Out Occupations

   For more information, write to:

   Dr. Calvin D. Catterall
   Coordinator, Counseling and Psychological Services
   Santa Clara Unified School District
   1889 Lawrence Road
   Post Office Box 397
   Santa Clara, California 95052

2. AIR developed materials designed for a Personal and Social Development Program. For more information, write to:

   Guidance Research Program
   American Institutes for Research
   P.O. Box 1113
   Palo Alto, California 94302

3. AIR developed objectives for assessing citizenship competencies. For more information, write to:

   National Assessment Office
   Room 201A Huron Towers
   2222 Fuller Road
   Ann Arbor, Michigan 48105

*American Institutes for Research

4. AIR developed learning units prepared for the guidance program in Project PLAN.

Business Sales Occupations

Business Clerical Occupations

Business Management Occupations

Technical Occupations

Teaching Occupations

Health Service Occupations

Public and Commercial Service Occupations

Social Service Occupations

Social Science Occupations

Performing Arts Occupations

Building Trades Occupations

Mechanic and Repairman Occupations

Mathematical and Physical Science Occupations

Industrial Trades Occupations

Engineering and Architecture Occupations

Biological Science Occupations

For more information, write to:

PLAN
Westinghouse Learning Corporation
2680 Hanover Street
Palo Alto, California 94305

5. Self Appraisal and Assessment Structure. For more information, write to:

Dr. Stanley R. Ostrom
1953 Colleen Drive
Los Altos, California 94022

6. AIR developed instruments designed to assess student knowledge and performance related to an Educational-Vocational Program.

Occupational Knowledge Survey

Educational-Vocational Exploratory Behavior Inventory

For more information write to:

Guidance Research Program
American Institutes for Research
P.O. Box 1113
Palo Alto, California 94302

7. College SELECT program. For more information, write to:

Harcourt, Brace and Jovanovich, Inc.
757 Third Avenue
New York, New York 10017

8. ILS system of computerized data banks (college, occupations, vocational training schools, sources of financial assistance). For more information, write to:

Interactive Learning Systems, Inc.
1616 Soldiers Field Road
Boston, Massachusetts 02135

9. Job Bank of Computerized data on employment opportunities. For more information, write to:

Job Bank
U. S. Department of Labor
Washington, D. C. 20212

10. Santa Clara program of computerized local job information. For more information, write to:

Dr. Stanley R. Ostrom
County of Santa Clara
Office of Education
45 Santa Teresa Street
San Jose, California 95110

CHAPTER VII

COMPONENT NO. 4

ASSISTING STUDENTS TO RESOLVE PERSONAL PROBLEMS MORE WISELY

As a review of the two previous chapters indicates, providing each young person with a sufficient amount of accurate information both about himself and about opportunities in the environment is of major concern in all aspects of career decision making. However, contrary to the philosophical position of some authorities, it is predicted here that the provision of information does not in and of itself either bring about or guarantee wise decision making. Early in the conceptualization of a comprehensive guidance system, a major cluster of youth guidance needs were linked to deficiencies students displayed in exhibiting adequate skills for resolving personal problems which confronted them on a day-to-day basis.

Providing young people with assistance in the realm of solving a wide variety of problems which come up in daily life has been advocated as the priority purpose of the guidance profession (Krumboltz, 1967) and as the framework around which the entire guidance program of a school should be built (Gelatt and Varenhorst, 1968). Some authorities have viewed this purpose of training individuals to solve life problems wisely as the major aim of American education in general and the unifying link between guidance and the remainder of the educational system (Rothney, 1958; Gelatt, 1962). If the possible negative ramifications of youth possessing inadequate problem-solving behaviors are examined (cf. Coleman, 1966; Passow, 1966; D'Zurilla and Goldfried, 1968), it is understandable that the process of assisting individuals in learning how to solve problems wisely has been advocated as a major purpose of the guidance profession.

However, when an attempt is made to clearly operationalize definitions of personal problem-solving behaviors, difficulties arise in deciding exactly what phenomenon should receive attention. For example, within guidance literature, the terms "problem solving" and "decision making" are at times used synonymously, while in other references they are considered to be distinct phenomena. Brim (1962) distinguished between decision making and problem-solving when he asserted that problem solving more often referred to contrived, artificial, laboratory tasks, whereas decision making focused more on real-life situations. There is considerable support for this categorization of research literature, but a more useful clarification was attempted by D'Zurilla and Goldfried (1968) when they designated decision making as a major step in the process of human problem solving. Support for this analysis can be found in the work of Gagné (1959) and, therefore, this distinction has been adopted in work attempted relative to this component of a comprehensive guidance system. Thus, decision making involves some but not all of the diverse problem-solving behaviors.

Identifying Youth Problem-Solving Needs

A survey was made of the major historical orientations of psychological research on human and animal problem solving and decision making. The preponderance of research dealing with human problem solving has been conducted in laboratory situations far removed from problems faced in individuals' personal daily lives. Though such laboratory problems have some formal properties in common with life decisions, such as the fact that there exists a choice between a set of alternatives, research findings from these studies can be appropriately generalized to personal life circumstances only with the greatest hesitancy and a myriad of qualifications (Tate, 1959). A second area of research has involved attempts to describe decision behavior in statistical terms or in terms of mental activities. Such research stresses the effects of various psychological cognitive variables upon problem solving (cf. Townsend and Smith, 1964; Scodal, Ratoush, and Ninas, 1959), and especially supports the conclusions of Gibby, et al. (1967) that problem-solving abilities have been treated in "a . . . theoretical manner rather than in an experimental fashion. Only recently have initial attempts been made to define decision-making ability empirically . . . (p. 450)."

From this survey of relevant literature, it was concluded that cognitive processes and the overt behaviors manifested by individuals in problem-solving situations are learned. In fact, as both Skinner (1953) and Brim (1962) have observed, human problem-solving behaviors which now appear to be habitual responses on the part of individuals probably have been learned in earlier problem-solving contexts. By considering that problem-solving behaviors are phenomena which can be learned or have been acquired in previous problem contexts, it can be postulated that such behaviors may be modified and improved through training and that effective behaviors may be trained in a manner which would maximize their transfer to a wide variety of problem situations. This position implies the need for practicing desirable problem-solving behaviors in real-life problem contexts, but contains no implication of disdain for or lack of interest in cognitive phenomena. It is argued that if one prime objective is to assist individuals to resolve real-life problems in a skillful manner rather than to describe exhaustively the how and why of everything occurring inside and outside the individual in the problem-solving context, then it is most useful to focus on observable behaviors and not on inferred cognitive processes or events.

Once the position above was adopted, it was decided that the behaviors involved in solving real-life problems wisely could be specifically delineated, and alternative methods could be explored for helping youth to acquire and to perform these behaviors. Considerable attention was subsequently given to an investigation of behaviors involved in the process of effectively resolving real-life personal problems. These behaviors would in essence be designated as the terminal competencies of the desired training program and would enable statements to be made regarding youth problem-solving needs which would be translated into specific objectives for the training program. The identification of the terminal behaviors was accomplished primarily through study of available models purporting to describe human problem-solving.

Problem-Solving Models

A multitude of conceptualizations or models of problem-solving phenomena has been offered (e.g., Dewey, 1933; Polya, 1945; Simon, 1957). A representative sample of these is presented in Table 7 on the following page where an

TABLE 7

EXAMPLES OF GENERAL PROCESS MODELS OF HUMAN PROBLEM SOLVING

Dewey, 1933	Kawin, 1957	Gagné, 1959	Brim, 1962	D'Zurilla and Goldfried 1968
Perplexity or doubt.				
Identification of a problem.	Recognition and definition of the problem.	Reception of stimulus situation.	Identification of the problem.	Orientation to the problem. Problem statement and definition.
Research for facts.	Preliminary observation and collection of information.		Obtaining necessary information.	
	Analysis of facts to see how they relate to the problem.	Concept formation or invention.		
Formulation of a possible solution.	Formation of possible solutions and evaluation of them.	Determining courses of action.	Production of possible solutions. Evaluation of such solutions.	Production of alternatives.
A testing of solutions.		Decision making.	Selection of a strategy for performance.	Decision making.
Re-analysis of the problem.				
Application of the correct solution.	Trying out the most promising solution. Checking to see how the solution works.	Verification.	Actual performance of action and revision.	Verification.
	Being ready to make changes in the problem-solving plan.			

attempt has been made to graphically compare analagous portions of the various models. An important insight to be gained from an examination of these problem-solving descriptions is that most are predominantly step oriented. In other words, they are stage models which represent a problem solver as progressing through a sequential order of activities. Newell (1965) has raised objections to stage models for representing human problem-solving, and these objections suggest that it is more useful to avoid static models and to emphasize behaviors and skills (i.e., a closely interrelated group of behaviors) which are useful in effective personal problem solving.

A second group of problem-solving descriptions has direct application to real-life problems as opposed to more artificial or laboratory tasks. These models, which usually have vocational and educational choices as their focus, have been summarized by Hilton (1962), and an examination of them is useful in order to uncover the specific skills demanded by real-life problem-solving. Some of these models are illustrated by Table 8 on page 103. Hilton's models tend to reflect, more adequately than did the previously illustrated ones real-life problem-solving contexts of, and the complex inter-relationships between, various aspects of the problem-solving process. Therefore, a graphic comparison such as that which has been attempted here tends to force them into a stage format, which is inappropriate.

From these descriptions and the more extended descriptions formulated by the respective authors and others (e.g., Bross, 1953; Gelatt, 1962), a number of specific behaviors associated with effective real-life problem-solving were derived. Most descriptions of the problem-solving process consider the importance of identifying and clearly defining the problem at hand. Additionally, most of them support the need for studying the consequences of various alternatives before choosing one. Finding information, separating relevant from irrelevant information, and considering such information in light of the problem is an additional behavioral cluster. Another is that of producing and considering several different tentative solutions before choosing one of them. Similarly, several models imply behaviors revolving around selecting one of the tentative solutions to be tried and implementing that solution. Such selection behaviors constitute what is herein termed the decision-making skill area. A further similarity among the models is the concern they show for maximizing what the individual has learned from going through the problem-solving process. This is manifested by the analyzing of both the outcomes of problem solving and the process which has been used in arriving at a solution.

While most problem-solving models described the total problem-solving process, prior to the formulation of specific training program, each skill area or cluster of behaviors had to be operationalized into its constituent behaviors. For example, Krumboltz (1966b) generated an in-depth analysis of two major aspects of problem solving (i.e., the consideration of alternatives and decision making) and included these behaviors:

> Generating a list of all possible courses of action;
> Gathering relevant information about each feasible alternative course of action;
> Estimating the probability of success in each alternative on the basis of the experience of others and projections of current trends;
> Considering the personal values which may be enhanced or diminished under each course of action;

TABLE 8

REAL-LIFE PROBLEM-SOLVING MODELS

ADAPTED FROM HILTON (1962)

Attribute Matching Model	Need-Reduction Model	Probable Gain Model	Social Structure Model	Complex Information Processing Model
Inventories Personal attributes	Appraises Needs		Recognizes the social structure in which one is operating and one's position in it	Too much available information to be handled by the limited capacity of a human
Ascertains attributes of jobs		Generates or is given alternatives	Judges whether or not to pay the cost for each possible decision	Faced with a set of alternatives
	Estimates degree to which each job meets needs	Specifies or gains knowledge of outcomes and probability of occurrence and costs of wrong decisions	Analyzes alternatives in the light of the value of certain outcomes	Matches each alternative's outcomes against a subjective criterion of satisfaction
Selects one alternative which best meets attributes	Selects one that best meets needs	Selects according to economic decision rules (e.g., minimax theorem)		Chooses alternative in which most outcomes are at an acceptable level on a satisfaction scale

Deliberating and weighing the facts, probable outcomes and values for each alternative;
Eliminating from consideration the least favorable courses of action;
Formulating a tentative plan of action subject to new developments and opportunities;
Generalizing the decision-making process to future problems.

From a search of these and similar sources a preliminary list of behaviors requisite to solving personal problems wisely was developed. This list served as the initial draft of the terminal competencies for a training program designed to help each student perform skillfully and consistently behaviors such as these when he is confronted with personal problems:

Being sensitive and able to perceive problems when they exist;
Clearly defining the parameters and nature of the problem;
Being aware of other plausible ways to define the problem;
Stating conditions under which problem would be classified as resolved;
Stating goals or objectives in solving the problem--criteria to fulfill;
Formulating a strategy for searching for information relevant to the problem;
Evaluating information sources;
Identifying sources of information;
Evaluating the relevance and accuracy of information;
Demonstrating how to utilize sources of information;
Being open to information;
Generating several viable alternative solutions to the problem;
Considering several alternatives in light of the information gathered and the criteria for problem solution;
Specifying possible consequences of each alternative;
Assessing the desirability and/or probability of such consequences;
Identifying some personal standards or criteria of personal desirability;
Selecting one alternative to be implemented;
Formulating a rationale for such a selection;
Selecting a second alternative as a second choice to be used in case of certain contingencies;
Stating why the second alternative was chosen and the specific rationale for it:
Specifying a plan for carrying out the chosen alternative;
Identifying some conditions under which the second alternative will be implemented;
Considering various rules or philosophies for selecting an alternative from among many;
Exhibiting the specified behaviors to implement the chosen alternative;
Analyzing the implementation process as it is carried out and after it is completed;

Switching to a back up plan when appropriate;
Being sensitive to and recognizing the consequences and outcomes resulting from implementing the chosen alternative;
Analyzing positive and negative consequences of the problem-solving process followed;
Ascertaining when the problem is satisfactorily solved;
Correctly judging whether the plan of implementation should be modified or scrapped or if the second choice should be implemented. (i.e., What should be done if the problem was not solved?);
Identifying what was learned that will help in future problem contexts.

Needs statements for each student could easily be formulated by determining the extent to which he performs each of the behaviors just listed. From this list of problem-solving behaviors, instructional objectives such as the following were written. These are representative of ones formulated at a relatively early stage of program development. While exhibiting some of the qualities of acceptable behavioral objectives, they however lack much of the specificity and information regarding the conditions and the quality of the performance requested of each student.

1. When presented with varying situational contexts, the student can discriminate those in which a real-life problem exists.

2. When presented with a problem in general terms, the student can analyze the given information sufficiently to define in specific terms the nature of the problem.

3. When presented with a problematic situation, the student can define the problem in at least two alternate ways.

4. When provided with problematic situations defined specifically, the student can state a minimal set of circumstances under which the problem would be classified as resolved.

5. When provided with a specifically defined problem situation, the student can state possible goals or priority objectives to be sought in an acceptable solution to the problem.

6. When provided with a specifically defined problem and with a set of goals to be included in a solution, the student can formulate a plan which explains how he will go about obtaining the necessary information leading to the selection of an acceptable solution.

7. When provided with an example of an information source, the student will state the positive and negative features of this source.

8. When asked to obtain a specified piece of information, the student will be able to point out at least two sources from which the information may appropriately be obtained.

While deficient in many respects, this level of terminal behaviors and the subsequent formulation of general program objectives related to those behaviors, provided something tangible to be shaped and refined. Next, further attempts were made to clarify the needs, to study the nature of their interrelatedness, and to make decisions regarding priorities or levels of importance among them.

Classifying Objectives by Commonalities and Assigning Priorities

At present, the interrelationships of problem-solving behaviors such as those specified in the previous section are unknown. However, in an attempt to further integrate and systematize the problem-solving behaviors reported in the literature, the problem-solving paradigm displayed in Table 9 on the following page was prepared. This paradigm served as the basic framework upon which the comprehensive training program for problem solving was developed. From the similarities found among the previous problem-solving models discussed earlier and from logical inferences about how the specific behaviors might be associated or related to one another, the separate behaviors were grouped into what were designated as skill areas. A skill area was defined as a cluster of more specific behaviors which were hypothesized to be closely associated in terms of either similarity in actual responses made by an individual, or in chronology of those responses, or in terms of their interrelated effects upon one another. In addition, it should be noted that although the stage model concept is eschewed, the groupings of behaviors identified in Table 9 fall into three broad processes (i.e., Planning, Decision Making, and Implementing). It was postulated that many of these behaviors, and in fact the broad processes themselves, occur several times; not always in the same order; and at times simultaneously during any particular problem-solving occasion. The general process of planning seemed basic to this whole paradigm, therefore, the two skills areas forming this process were given top priority attention in program development.

In order to illustrate briefly the repeated efforts to refine the instructional objectives of this training program, examples of instructional objectives written at this more intermediate stage of development are presented below. By this point in time, student problem-solving behaviors, as indicated in the paradigm of Table 9, had been quite thoroughly revised and settled upon (at least with respect to the formulation of a prototype program to be field tested) and the clustering of those needs had been revised. The following example objectives are taken from what became known as Skill Area #3, the "Consideration of Multiple Alternatives."

1. When provided with an array of alternative problem solutions, the student will be able to list the possible positive and negative outcomes related to the choosing of each alternative.

2. When information is provided him relative to a hypothetical problem-solver, the student will be able to express specific standards for rating the desirability of possible outcomes associated with the choice of a specific alternative.

TABLE 9
PERSONAL PROBLEM-SOLVING PARADIGM

General Process Skills	Specific Problem-Solving Behaviors Grouped by Behavioral Skill Areas
A. Planning Emphasis--decision making and performance activities are involved in these problem-solving behaviors but the emphasis is upon using a planned approach to understanding the problem and gathering information on it in order to expedite subsequent problem-solving activities.	1. Perceiving, delineating, and comitting to work on, the problem. a. Perceiving a personal problem when it exists. b. Inhibiting the tendency to respond impulsively, passively, or by avoiding the problem. c. Stating the conditions that would exist if the problem were resolved. d. Specifying discrepancies between current personal status and those levels that would exist if the problem were resolved. 2. Searching for, evaluating, and utilizing the information. a. Formulating a strategy for searching for information relevant to the problem. b. Knowing and evaluating sources of information. c. Efficiently utilizing the sources of information. d. Evaluating the reliability and accuracy of information received and its relevance to the problem. e. Being willing to consider new information relevant to the problem even when it conflicts with that presently held.
B. Decision-Making Emphasis--planning and performance activities are involved in these problem-solving behaviors. Planning skills are ones which are particularly important following the decision-making activities implemented here.	3. Generating and considering multiple alternative problem solutions. a. Generating several viable courses of action or alternative solutions to the problem. b. Knowing possible outcomes associated with each alternative. c. Calculating the subjective and objective probabilities of each outcome's occurrence. d. Using some personal standards or criteria for determining the desirability of possible outcomes. e. Considering each alternative in light of the information gathered on its possible outcomes and in relation to the conditions that would exist if the problem were resolved. 4. Selecting the most desirable alternative problem solutions and formulating plans for implementing these alternatives. a. Knowing and considering various rules or philosophies for selecting an alternative problem solution. b. Selecting a preferred alternative problem solution to be implemented and knowing the rationale for the choice of this alternative. c. Selecting, and knowing the rationale for the selection of, a second alternative problem solution to be used in case certain contingencies arise thwarting implementation of the first choice alternative. d. Detailing a plan for carrying out the preferred alternative problem solution. e. Knowing some conditions under which the second alternative problem solution might be implemented.
C. Implementation Emphasis--activities here involve what has been referred to as "student managed performance." However, decision making (relative to evaluating one's problem-solving behavior) and planning (relative to revising or changing plans for implementation) are both involved in these activities.	5. Implementing specific plans related to selected alternatives. a. Until such time as other plans appear more appropriate, exhibiting the behaviors necessary to implement the plan for the chosen alternative. b. Correctly judging whether the plan of implementation should be modified, or replaced with a plan for implementing the second choice or other alternative. c. Implementing a plan for the second or other alternative as a result of information collected while acting on the preferred alternative. 6. Analyzing the process and product of problem solving. a. Ascertaining if the problem has been satisfactorily solved by comparing present conditions with those previously specified for problem solution. b. In terms of the model presented here, analyzing the positive and negative aspects of the behaviors emitted during the problem-solving process. c. In terms of the previously specified conditions for problem solution, analyzing the positive and negative aspects of the solution and the results of the problem-solving process. d. Knowing what has been learned (i.e., principles and techniques) that will be of help in future problem contexts. e. Applying these principles and techniques to future problems when appropriate.

3. Following practice experiences with probability information and expectancy tables based on the experiences of other students, the student will be able to estimate accurately the probability that a particular outcome which is specified will occur.

Specifying Alternative Strategies for Fulfilling Youth Problem Solving Needs

Three major efforts were launched to formulate several viable strategies for assisting students to fulfill the guidance needs related to personal problem solving. First, guidance programs already developed with a similar purpose were examined. Secondly, previous specific research studies attempting to produce particular personal problem-solving behaviors were analyzed and the realm of instruction-related research was also selectively sampled. Lastly, an experimental investigation was conducted in order to suggest optimal strategies to be employed with students in an actual prototype program to be field tested in the schools.

Previous Programmatic Efforts

During recent years, several self-contained packages which attempt to assist students in making decisions wisely have been developed (Katz, 1959; Ligon and Smith, 1968; Loughary, et al., 1967; Magoon, 1966; Wilson, 1967, and Yabroff, 1966). These have been predominantly product, not process, oriented in that they have emphasized problem solutions or decisions, not the skills employed in arriving at those solutions. The effects of these programs have been untested, at least in terms of published reports. Little information has been provided regarding whether or not each student's behaviors have changed as a result of his being exposed to the programs. Some self-report data on student reactions has been made available and Katz's program did undergo at least one evaluation study without any control group (Gribbons, 1960). Most of these programs have been geared toward a very narrow range of problems (e.g., educational and vocational) though Wilson (1967) did discuss decision making in general and Katz (1961) outlined the usefulness of the process in other areas of life. Most emphasis has been given to information-gathering skills and to the skill of assessing their probability of success based on the experience of others. Students have been involved in actually carrying out a few tasks (e.g., filling out next year's high school program) but no coordinated sequence of practice on the various skills of problem-solving has been provided.

In spite of their limitations these programs are important for they deal with personal life decisions, they are written for the most part in language understandable to students, there is at least the foreshadowing of a possible transfer of behaviors to other life areas, and they involve ideas and concepts that are important in solving human problems. Additionally, a study of such programs yields suggestions for alternative types of instructional exercises which might be employed in a training program. However, no training program specified the necessary behaviors and skills for solving personal problems wisely, systematically trained such behaviors, and effectively evaluated the effectiveness of the training.

Recently, D'Zurilla and Goldfried (1968) and Goldfried and D'Zurilla (1969) became concerned with the general goal of bringing about effective behavior in college freshmen encountering problematic situations, so they attempted to develop a program to train individuals in effective cognitive mediational operations related to problem solving. These investigators collected a body of descriptive information on typical day-to-day problem situations faced by male freshmen and on the ways in which they responded to such situations. This is a particularly positive feature of this program in that needs assessment is being carried out directly with representatives of the target population.

Focusing on those problems with widest application among the target population, "experts" from the environment of the students were selected to judge the effectiveness of the various alternative responses to each problem situation. Once standardized realistic problems have been identified and the relative effectiveness of alternative solutions for each problem has been determined, training for "effective" behavior will be initiated. An imaginative variety of techniques including discussions, role play, behavioral rehearsal, and programmed texts is being considered for training purposes and evaluation procedures based on the objectives of the program are being planned. Such features combine to make this program exemplary when it is contrasted with others reported in guidance-related literature.

Perhaps the finest programmatic work in the training of problem solvers has come from war strategy tasks in which an individual using available information about the enemy has had to make decisions which minimize negative outcomes to the man and equipment with whose care he has been charged. Using Bayesian rules for optimal decisions, Sidorsky, Houseman, and Ferguson (1964) engaged in research aimed at identifying the specific skills needed in a war strategy decision situation. However, research studies like this which attempt to identify or to train specific behaviors necessary for effective problem solving are rare indeed. Due to the vast difference in the tasks involved and their contexts, their findings can only be roughly converted to the realm of real-life personal problems. For this reason, the research related to tactical tasks was not examined in depth.

Individual Investigations and Instructional Research

An examination of isolated individual studies produced both clues to factors which seem to influence real-life problem-solving behaviors and to potentially useful strategies for a training program. For example, one behavior receiving particular attention in some studies (cf. Johnson and Zerbolio, 1964; Johnson, Parrott, and Stratton, 1967; Wilson, Guilford, and Christensen, 1953) has been the generation of alternatives or multiple solutions to problems. Evidence reported by Maltzman (1960); Maltzman, Bogartz, and Breger (1958); Mednick (1962); and Sieber and Lanzetta (1966) suggests that behaviors viewed in this report as being desirable in the problem-solving process can be modified experimentally, that reinforcement techniques may be of potential use in bringing about such modifications, and that under optimal training conditions newly acquired problem-solving behaviors can be transferred to other unrelated but appropriate situations.

Through the use of programmed materials, Blank and Covington (1965) increased question-asking behaviors among sixth graders on science problems. Krumboltz, Baker and Johnson (1968); Nelson and Krumboltz (1967) and Krumboltz, Sheppard, Jones, Johnson, and Baker (1967) designed kits simulating the problems workers encountered on the job in various occupations. Some evidence was obtained indicating that such experiences did increase the amount and diversity of secondary school students' information-seeking behaviors relevant to vocational problem solving. Using reinforcement techniques in counselor interviews, Ryan and Krumboltz (1964) increased the number of verbal statements indicative of both deliberation about a decision and that conclusions about a decision had been reached. This modified behavior was reported to have generalized to a non-counseling setting.

In an attempt to teach eighth-grade students a decision-making strategy, Evans and Cody (1969) employed a variety of treatments including cueing and prompting in addition to video and audio-tape modeling with one group, reflection of student statements with a second group and no instruction whatsoever with a third group. The strategy included such behaviors as considering the consequences of each alternative course of action and judging the desirability of these consequences. This study's results indicated that the guided group which received the modeling experiences along with experimenter prompts and cues performed significantly better on this criterion measure than did either of the remaining groups. While this investigation provides strong evidence that some problem-solving behaviors can be taught to students, the treatment group scoring highest received so many training experiences that it is impossible to ascertain the separate effects of each training technique.

The results of the Evans and Cody study are helpful especially in that they suggest variations of potentially useful training strategies such as the use of social models. Bandura (1965a), (1965b) has reported that a wide variety of behaviors can be modeled and imitated successfully. Furthermore, the characteristics of social models which have been found to be influential have been age (Marston, 1965), competence (Bandura and Kupers, 1964), creditability (Rosenbaum and Tucker, 1962), power (Mischel and Grusec, 1966), prestige (Asch, 1948), sex (Thoresen, Krumboltz and Varenhorst, 1967), status (Lefkowitz, Blake, and Mouton, 1955), and ethnic group (Epstein, 1966). However, the specific procedures by which these characteristics promote imitation of various types of performance have not yet been made clear.

Another important consideration in the review of alternative strategies for the proposed training program was the possible media of presentation, especially if social models were to be used. The use of video-tape has been encouraged by several leaders in the guidance profession (Wrenn, 1962; Magoon, 1964). Major advantages to this medium are a reproducible sequence of events generated at relatively low cost, and the ease with which competing media such as audio-tape and written booklets can be made comparable in content. However, when compared to audio-tape and written materials, video-tape becomes an elaborate and expensive medium for experimentation in the schools, so strategies relying on audio-tape and written booklets need to be explored as well. While the lecture method has frequently proven less adequate than other methods of teaching (e.g., Lewis, 1964) or only as adequate (e.g., Ulrich and Pray, 1965), it remains a dominant approach in both secondary and higher education. However, the preponderance of research has tested the effectiveness of lecture through information recall based on paper-and-pencil tests, and not through overt performance of some complex behavior.

In spite of this fact, it was decided that a traditional live lecture strategy, not just audio- and video-tape strategies and booklet presentations, should be given ample opportunity to demonstrate its usefulness for a comprehensive training program of problem-solving behaviors.

An additional area of research which has implications for the design of training strategies is that summarized by Lumsdaine (1961) who concluded that learning approaches which foster active response in the subjects are generally found to be more effective than procedures not containing audience participation. Though dealing predominantly with subject matter recalled subsequent to the instructional procedures, several studies have supported this conclusion (Lumsdaine, May, and Hadsell, 1958; Michael and Maccoby, 1961). Another stimulus variable studied in both learning and communications research has been the immediate reinforcement of a subject's participatory responses. Several studies (e.g., Maccoby, Michael and Levine, 1961; Michael and Maccoby, 1961) have consistently found that immediate reinforcement of these responses had a positive effect upon student performance even when the responses were covert. Therefore, in seeking a powerful treatment to train any particular problem-solving behavior, it was postulated that the factors of requesting overt responses from the subjects and subsequently reinforcing those responses which are correct could be paired effectively with modeling procedures used in a variety of media. These suggestions from research were not considered to be exhaustive but did provide some alternatives which were worth further study.

Experimental Investigation of Training Strategies

The review of relevant literature summarized in the previous two sections suggested a number of diverse questions for further studies more closely related to the project's purpose of developing a prototype training program for students. A decision was made to conduct one experimental investigation to explore some of the issues outlined previously and to base decisions on other issues upon a continued intensive study of available literature. The prime purposes of this investigation were to explore the effect of a number of promising training strategies aimed at producing specified problem-solving behaviors, and to investigate the possible effects of one learner characteristic (i.e., subject sex) upon these treatment strategies. A problem-solving skill postulated to be of key importance (i.e., the consideration of several alternative problem solutions prior to choosing a solution) was selected for study. From the study of problem-solving research, several alternative training strategies were chosen for investigation as to their comparative effects. These included: (1) video-tape modeling procedures, (2) audio-type dramatization, (3) dramatization via a written booklet, parallel treatments (4, 5 and 6) to each of the foregoing, (each of which also involved the provision of social reinforcement for subjects displaying desirable responses during training), (7) an instructional lecture treatment, and (8) a control group in which subjects were exposed to programmed materials on descriptive statistics. The particular questions to which answers were sought included: (1) Is video-tape the most effective training medium under investigation? (2) Does the addition of social reinforcement during training heighten the effect of each specific treatment? (3) Are there differential effects of treatments which are dependent upon the sex of the subject being trained?

A total of nine criteria were derived from three criterion instruments developed for this study. Of these nine dependent variables, seven were derived from two simulated problem-solving situations which were individually administered to subjects. The first of these situations assessed each subject's performance of the desired problem-solving behaviors by using a situation in which each subject was asked to assist a hypothetical problem solver with a personal problem. The second simulation assessed manifestation of the desired behaviors by having each subject select a personal problem of his own and subsequently select a person to help him resolve that problem. For both of these instruments, an experimental assistant kept records of the number of alternative problem solutions each subject considered, the amount of information reviewed for each alternative, as well as the final alternative selected. The two additional criteria were derived from the pre- and post-treatment administrations of the "Checklist for Solving Problems in Real Life," composed of 12 statements describing personal problem-solving behaviors, and designed to assess each subject's need and desire for training in effective problem-solving behaviors. One of these criteria involved an examination of the positive and negative reports each subject made about his own personal problem-solving behaviors. The other criterion reflected any increase or decrease in the number of written requests for problem-solving assistance made by each subject after exposure to one of the treatment conditions.

The research hypotheses were as follows:

1. Subjects assigned to the video-tape with reinforcement treatment will score higher on the criteria than will subjects assigned to any other treatment condition.

2. Subjects assigned to the three treatment conditions involving social reinforcement will score higher on the criteria than will subjects exposed to similar conditions not involving social reinforcement.

3. Subjects assigned to the two video-tape treatment conditions will score higher on the criteria than will subjects assigned to the two treatments involving written booklets or to the two treatments involving audio-tape, or to a treatment involving an oral lecture, or to the baseline control condition.

4. Subjects assigned to the two audio-tape treatment conditions will score no differently on the criteria than will subjects assigned to the two treatments involving written booklets.

5. Subjects assigned to the oral lecture treatment condition will score higher on the criteria than will subjects assigned to the baseline control treatment.

No interactions between media, the use of reinforcement, and the sex of subjects were hypothesized.

In a suburban San Francisco Bay Area high school, all eleventh graders responding positively to a device designed to assess their need and desire for problem-solving training formed a pool from which 128 students were randomly assigned by sex to one of the eight treatment conditions noted earlier. Convening in separate rooms within the high school counseling suite

at various times during a four-day period, each group received the same opening and closing remarks prior to, and after, the administration of its treatment procedure. Approximately one week following completion of treatment administration, collection of criterion data was begun. Students were summoned individually on a random basis and were exposed to all three criterion measures within a 30-minute period. This phase of the investigation consumed a total of eight school days. The two problem-solving simulations were followed by the second administration of the Checklist for Solving Problems in Real Life.

The conclusions yielded by this investigation are summarized below. The five specifically related to stated hypotheses are offered first, followed by an additional conclusion warranted by the data.

1. With regard to hypothesis one, no one training strategy proved to be optimal for helping students to acquire effective problem-solving behaviors. The results of this study both from analyses of variance and from t-test procedures led to the conclusion that a number of training strategies may be useful in the training of personal problem-solving behaviors. The most useful strategy seems to depend on the context in which it is being used. This involves factors such as the particular behavior to be trained and characteristics (e.g., academic achievement level) of the subjects being trained.

2. Providing social reinforcement for desirable verbal participation by subjects during training did have an effect upon some problem-solving behaviors examined by this study but the pattern of effect was complicated and not entirely consistent. It appeared that the effect of reinforcement was confined to the specific behaviors for which the reinforcement was given and to behaviors highly related to those behaviors. In other words, the generalization effect of the social reinforcement was small.

   With regard to the consistency and pattern of reinforcement effects, it appeared that on several criteria the introduction of social reinforcement procedures in response to desirable verbal participation by subjects during training usually had a positive effect upon both video-tape and written booklet approaches and had reverse results with regard to the audio-tape treatment. This reversal seemed to be the major barrier to a lack of statistical significance at desirable levels being attained in favor of treatments using reinforcement.

3. No training medium was found to be most effective irrespective of either the specific problem-solving behaviors being assessed or such variables as the use of reinforcement and the sex of the subjects. Thus, like the question of specifying the optimal training strategy, the media issue remains complicated. Even when social reinforcement was added in each of the training media, no one medium proved consistently superior to the others. Invariably interactions must be referred to in order to point out the most effective training medium for a given context.

4. In line with the prediction contained in Hypothesis 4, the audio-tape and written booklet procedures did not prove to be significantly different in their effect upon the dependent variables. This is the one hypothesis receiving consistent support from the data.

5. An important finding was that the oral lecture did not produce significantly more or less scores on the criteria than did the baseline control treatment. It was expected that a dynamic live verbal presentation would produce more of the desired behaviors than would programmed materials written on an apparently irrelevant subject.

6. Though there appeared to be differences in treatment effectiveness attributable to sex, most of these did not reach desired levels of statistical significance. In spite of the fact that sex did not produce any main effects at the desired levels of significance, it cannot be concluded that it is of no consequence in training problem-solving behaviors. For example, in studying interaction effects, it was revealed that while both the video-tape and the written booklet with reinforcement served equally well among males in stimulating subjects to consider alternatives on one of the simulation criterion instruments, the written booklet was easily more effective than was the video-tape in stimulating such behavior among females.

In some respects, this study was a disappointment. Clear implications for a training program on personal problem-solving had been anticipated but were not received. Some critics might make the point that such implications should not have been hoped for since anything even close to a rigorous experiment in the classic sense of scientific research is nearly impossible in educational research. Others, upon close examination of its design and procedures might well assert that the investigation sought the answers to too many questions which resulted in getting definitive answers to none of them, or that there were too many uncontrolled opportunities for the confounding of results. There is some thread of validity to each of these criticisms and, in the full research report of this study (Nelson and Jones, 1970) they are explored at some length. However, this study did have some implications which influenced the formulation of the program. The production and field testing of sample instructional and evaluational materials and procedures later used in the experiment were two areas of definite contributions. Other implications are listed below.

1. It may well be that there is no overall optimal strategy for training effective personal problem-solving behaviors. Either such a strategy does not exist, was not included in those strategies implemented in the present investigation, or, if included, the design and instrumentation used in this investigation were not sufficiently sensitive to uncover it. The burden of evidence seems to suggest that if the basic purpose of research and development work is to specify an optimal training strategy, the particular problem-solving behavior that is to be produced in each stage of the training program must first be clarified. This need for clear cut and early delineation of students' terminal competencies is consistent with the rationale underlying the design of a comprehensive guidance system.

2. With regard to the use of social reinforcement in a problem-solving training program, sufficient support was obtained to explore its use in a prototype program, though it appeared that in order to achieve its potential effect reinforcement procedures might need to be specifically linked with each and every behavior being trained. Also, rival hypotheses that effects attributed to the use of social reinforcement might in reality have been the results of subjects' immediate knowledge of correctness of response, or frequent changes of activity during the training period, should be closely investigated by considerable additional research.

3. Those individuals who appeared to effectively administer treatments, to provide social reinforcement, and to present criterion instruments were not highly trained. The successful implementation of the study by such personnel raises the possibility that an operational program for the schools could be produced which would minimize its reliance upon highly trained professionals, such as the counseling staff, and could maximize the role of students, teachers and paraprofessionals.

4. Though the lecture approach failed to fare well overall when compared to other strategies, a study of data on a subject-by-subject basis revealed that certain individuals responded quite favorably to it as judged by their behavior on the criterion measures. If the characteristics of such students form a discernable pattern, a series of standardized didactic lectures might be one useful strategy in an overall battery of approaches.

5. It was noted that the written booklet training medium rather consistently produced the most effects as a result of the introduction of social reinforcement procedures. Perhaps even this strategy with the assistance of social reinforcement, or some similar variable, might be of help to particular students. This possibility must be considered particularly when the economy of instructional materials production is important.

6. The content of instructional materials used in the training program might introduce a confounding effect into the attempt to achieve clear training effects. In this investigation, logic alone was employed to determine just what problems should be stressed as examples in the treatment and criterion materials. Optimal content in a prototype program should be determined empirically. The interest of students and the quality or frequency of their responses probably will fluctuate with such content.

Selecting, Designing, Scheduling, and Implementing Strategies for a Prototype Program

The preceding literature review and the results of the pilot investigation suggested that the desired training program for personal problem-solving should incorporate a range of instructional media as well as strategies which permitted the application of principles of social modeling, active student participation, and social reinforcement of appropriate responses. Since a large number of problem-solving skills were involved in the previously stated terminal competencies of this program, a decision had to be made regarding how the program would be sequenced for students. The main issue involved here related to the controversy over whole vs. part training procedures--a topic of concern in the psychological literature for the past 50 years.

Briggs (1968) summarized this area of research by indicating that the use of whole vs. part training for real-life jobs or tasks (personal problem-solving skills should fit this category) depends upon (1) the amount of relevant prior skills which have been mastered (i.e. the trainee must be developmentally ready for whole learning) and (2) the relative degree of time sharing (or overlapping in time) in the performance of the different parts of a task. This latter statement predicts that part learning is more effective if there is not much time overlap in the learning process. Due to these considerations, it was decided that a combination of techniques utilizing both whole and part learning appeared to be most desirable. While the formulation of sequential detailed steps in personal problem-solving did not appear useful for training, it seemed that possible major behavioral areas could be delineated within the problem-solving process. These were discussed earlier as the six "skill areas" of the personal problem-solving paradigm. Therefore, it was postulated that films, audio-tapes, booklets, and other devices could be used to assist students in acquiring and practicing elements (e.g., considering many alternatives) of the problem-solving process within each skill area. This procedure would incorporate the part method of learning. However, because it was agreed that these behaviors probably are highly inter-related, even though in an unspecified way when the process is actually employed, it was postulated that the whole method of learning could be emphasized by having students practice the complete problem-solving process as a whole several times during the training program.

Once a decision was reached regarding this sequencing issue, the instructional objectives of the training program were again refined. The objectives illustrated below for Skill Area #1 are representative of this revision. They more vividly identify the instructional process to which the student is exposed, the context in which the desired response is to take place, and the mode of response which is requested from the student.

Skill Area 1. Perceiving, Delineating, and Committing to Work on, the Problem

Having been exposed to a social model who perceived and defined the problem and who decided to work on it, and having completed written and/or oral exercises in which

he has practiced these behaviors, the student will be able to:

1. Identify, when provided with descriptions of an individual's desired goal conditions and his current status in relationship to those conditions, when discrepancies (i.e., possible problems) between the two descriptions exist.

2. State or write a clear definition of each discrepancy identified.

3. Exhibit the procedures specified in #1 and #2 above when placed in a simulated real-life problem situation similar to ones in his own life, and begin to work on the problem without responding impulsively or passively and without avoiding the problem.

4. Apply the above problem-solving procedures to a personal problem in his own life.

After successive drafts of instructional and evaluational materials and procedures, the following objectives tentatively were set for student use in Skill Area #1 of this training program:

1. To identify the manner by which hypothetical person has recognized, defined, and committed to work on a problem.

2. To explain what is meant by "recognizing a problem," and to identify what a person described to you wants, and what conditions currently exist for that person.

3. To explain what is meant by "defining a problem," and to point out when a difference exists between what a person wants and what conditions currently exist for him. If a difference exists, to indicate what the difference is.

4. To recognize examples of ways of responding impulsively, passively, and by avoiding the problem. Also to state the possible results of responding in each of these ways and to identify advantages of committing to work on the problem.

5. To apply the problem-solving skills learned in this Skill Area #1 to a simulated problem and then to a personal problem in your own life.

Instructional, counseling, and evaluation procedures and materials in the training program were organized into three phases as summarized in the following sections.

Orientation and Placement Phase

In this phase, each student will be introduced to the training program through "Pathfinder," the student handbook for the program. By using "Pathfinder" students will discover the purpose and nature of the program and will be exposed to an introductory film on personal problem solving.

By viewing this film and by participating in the accompanying activities, students will become familiar with the six personal problem-solving skill areas. The initial student experience in this phase involves a two-part assessment of students' current personal problem-solving behaviors. This procedure is aimed at providing the personal assessment information base for a prescription of the training experiences believed appropriate for each individual student. In essence, the training program is intended as an individualized sequence of experiences to assess each student's current level of problem-solving functioning and to recommend appropriate instructional methods and materials to help students who seem to have personal problem-solving deficiencies. An attempt also has been made to make these methods and materials self-instructional so that each student will be able to progress at his own rate.

The first part of the assessment is composed of the "Checklist for Solving Problems in Real Life" through which the student reports the problem-solving behaviors he normally employs and through which he may request assistance in acquiring or improving specific behaviors. The second portion of the assessment experience is a simulated real-life problem which the student works through on his own. His behavior in this simulation is carefully recorded and subsequently reported to him in such a manner that he, his parents, and available counseling personnel will be able to formulate a training prescription. The Orientation and Placement Phase of the program concludes with a student-counselor conference in which all the assessment results are discussed, training goals are set, and a Program of Studies for personal problem solving is formulated.

Training Phase

Training experiences in this phase are arranged into six sections, one corresponding to each of the six skill areas of personal problem-solving. Many of the training materials are designed to be predominantly self-instructional with minimal assistance needed from those who administer the program. At times, the student works with another student or with a group of students. The training materials for each skill area are introduced by a Guide Sheet which indicates to the student the nature and importance of the skill area in which he is working, the things he will be able to do after completing the training, and the materials and activities with which he will be involved. A major feature of the training experiences in each skill area is the audio-taped presentation of a social model who is of secondary school age and who exhibits desirable personal problem-solving behaviors. It is anticipated that as students observe an individual much like themselves working on a personal problem their interest levels will be kept high. During each of these presentations, the specific behaviors to be acquired by students are clearly indicated. In order to point up specific learnings that should accrue from the observation of the model, each audio-tape is stopped at points designated by an electronic signal on the tape. At each of these "stops" there are additional learning activities including questions to which each student will be encouraged to respond. These activities sometimes require assistance by the program administrator. After the specified activities take place, the tape presentation is resumed. Student group discussions follow each of these presentations and are designed to help make the terminal behaviors more explicit. Following the social modeling presentation and the

activities related to it, a variety of individual and group exercises have been designed to help the students practice the relevant problem-solving behaviors and thus meet the training objectives for each particular skill area.

In order to assess students' acquisition of the problem-solving behaviors included in a particular training section, to provide information to the student on his performance, and to facilitate closure with regard to the learning activities undertaken in each skill area, a limited problem-solving simulation test is inserted subsequent to the instructional activities within each skill area. Each simulation requires that the student use the particular things he has learned from the skill area on which he has just worked. Information from this assessment device indicates if the student needs further review or additional training of another kind in the same skill area, or if he has sufficient proficiency to move ahead to the next area of training prescribed in his Program of Studies.

Terminal Testing and Follow-Up Phase

This concluding phase serves as the primary means of evaluation in the program. Here, a second administration of the Checklist for Solving Problems in Real-Life and an elaborate personal problem-solving simulation offer an opportunity for the student to receive a report of how well he now performs in comparison to his performance during the initial placement phase which also involved the checklist and a simulation experience. Results from this terminal assessment also might lead to a number of recommendations for the student. At this point, it is suggested that available counseling personnel and each student meet together in a planning session based on the terminal test information. Parents should be involved in processing this information. The ultimate criterion of effectiveness and value for this program, of course, is that the daily behavior of students faced with personal problems changes for the better. Simulations can only approximate real life so subsequent follow-up procedures will be devised later. To sample students' behavior as they meet their own personal problems, future procedures will include structured personal interviews with individual students months after their exposure to the training program, and the gathering of data from other students and significant individuals who have observed these students' behaviors in personal problem situations. In the future, more controlled observations of the students' problem-solving behavior in daily life might also be instituted as more accurate evaluation devices than are currently available.

Collection of Student Data for Materials Content

An attempt was made to provide a realistic base for the content of student instructional and evaluational materials. The cooperation of a San Francisco Bay Area high school district was obtained for the collection of data on the kinds of problems actually being faced by students in their daily lives. Several classes at one of the district's summer schools were visited and the assistance of the students in two tenth-grade classrooms was solicited. Student volunteers were given guidelines containing instructions such as the following in an attempt to get them to generate personal real-life problems that they, or someone they knew, had faced.

1. Describe the circumstance leading up to the problem. Include details such as who was involved, the place where the problem happened or other things we need to know to understand the problem. (Be specific here! Rather than just say, "My brother and I had a fight," say, "It was late at night and I wanted to go to sleep while my brother wanted the lights on so he could read.")

2. Describe exactly what you (or the person whose problem you are describing) did to try to solve the problem.

3. Did this attempt to solve the problem bring good or did it bring bad results? In other words, what happened?

4. When did the problem occur?

5. How old is the person who faced this problem?

Include descriptions of as many problems as you can recall. Observe yourself and others closely during the next few days. During that time you might discover other problems that come up. You might want to include them. We'll return next week to collect your problem descriptions. When we return we will also answer any questions you might have about what we are going to do with this information.

An examination of the collected problems revealed over 60 which followed the suggested reporting format closely enough to be usable. Problems were subsequently categorized as to the type of incident reported. Some problems were sufficiently unique that they had to be single-entry categories but these are not included in the list of categories appearing as part of Table 10 on the next page.

Following this categorization of problems, the help of a second group of students attending the same summer session was solicited. These students were asked to indicate how frequently each category of problems occurs among students like them and how important each of the problem categories actually is. These 35 students were not volunteers but were attending two randomly selected classes in which the responses of all enrolled students were obtained. Table 10 provides information regarding the number of students who rated each category as being among the top 10 in frequency of occurrence and/or importance. It can be seen that problem categories A, D and I were picked most often and categories D, F, O and R were perceived as being most important. In general, it was concluded that most categories judged as occurring most frequently were also judged as being most important to this sample of students. This would be expected if the notion is accepted that most people view the problems coming up most often in their lives as being of greatest importance and intensity to them.

These findings directly influenced the production of problem-solving instructional and evaluational materials. One of the major tasks in materials production for the program was the writing of six scripts for the social modeling dramatizations, each of which corresponded to one of the six skill areas covered by the training program. While each script emphasized

TABLE 10

PERCENTAGE OF TOTAL POSSIBLE POINTS OBTAINED BY EACH PROBLEM CATEGORY AND RANKING OF THE TEN HIGHEST CATEGORIES ALONG RANKINGS OF THE DIMENSION

Problem Categories	Frequency		Importance	
	%	Rank	%	Rank
A. Conflicts with parents over the activities in which students may participate (e.g., music, dating, going certain places, etc.).	25	11	28	7
B. Having lied to parents about activities in which student has participated.	17		26	9
C. Concerned about parents' arguing and possible break up of home.	20		19	
D. Worrying about school grades or tests.	40	1	35	3
E. Being taken advantage of as a baby sitter either in the wage a student is paid or in the tasks a student is asked to do.	6		6	
F. Parents seem to notice only the mistakes of the student and do not praise things done correctly.	37	2	37	2
G. Having too much homework or taking too many hard courses.	29	9	30	6
H. Being influenced or encouraged to participate in unlawful or immoral behavior by friends or acquaintances.	30	7.5	16	
I. Conflicts with parents over student's appearance (e.g., clothes, hair, etc.).	31	6	34	4
J. Not knowing what to do when a person a student likes doesn't like the student in return.	11		15	
K. Not knowing how to deal with a friend who is immature or a bother without hurting that person.	25	11	27	8
L. Concerned about how to get along at a new school, or in a new situation.	32	5	25	11
M. Little brother or sister frequently causing trouble for the student at home.	16		17	
N. Having arguments or conflicts with a teacher.	22		25	11
O. Deciding on a career--educational and work future.	30	7.5	25	11
P. Deciding what to do after high school.	25	11	22	
Q. Not knowing how to be an effective leader in an organization.	12		14	
R. Disobeying parents.	33	4	39	1
S. Conflicts with parents about persons with whom student associates.	35	3	31	5
T. Conflicts or arguments with other students.	11		15	
U. Liking a person who is being dated by a close friend.	5		5	
V. Not knowing appropriate conduct with members of the opposite sex.	19		16	
W. People borrowing things and not returning them.	11		12	

behaviors involved in its problem-solving skill area, it touched upon other skill areas in the problem-solving process to a lesser degree. The specific life problems serving as the focal points for these scripts were chosen from those categories judged highly frequent and important in the lives of secondary school students. Other problems also conforming to these categories, appear prominantly as examples in the training program's written materials and in exercises designed to give students experience in simulating and practicing the desired problem-solving behaviors. The framework of problem categories developed from these raw data serves as a reference point for selecting additional problems as instructional or evaluational examples.

Evaluating Youth Problem-Solving Skills

Washburne and Darmshall (1967) suggested that a fundamental problem involved in measuring problem-solving phenomena arises from the fact that personal problem solving is not a unitary ability or skill, but rather that it is composed of widely divergent overt and covert behaviors and skills. Means (1966) concurred by stating that several skills are involved in problem-solving and that they are not all dependent on one another. Additionally, the apparent complexity and individuality of personal-life problems might inhibit investigators from initiating attempts to specify, to train and to evaluate problem-solving skills. It is also obvious that in contrast to personal problematic situations, contrived laboratory problem-solving tasks lend themselves much more easily to the control of variables, to evaluation procedures, and to mathematical analysis.

Considerable controversy has developed over whether the focal point of problem-solving training should be the process or the product of that process. Bross (1953) has suggested that the criterion for judging good or bad problem solving is pragmatic (i.e., What is the outcome of the decision? Did it work?) Leaning more in the direction of a process orientation, Gelatt (1962) stated that a good decision is one in which the decider has considered the alternatives and is willing to accept the consequences of his decisions. Halpern (1968) made a cogent case for examining problem solving in terms of its process. Using the problem of vocational selection as an example, he suggested that:

> Outcomes . . . are always a multiple function of the decision itself, the implementation effort and the milieu in which these occur. Contingencies . . . may drastically affect the probabilities of specific outcomes, yet the individual has little or no control over them. The preference for a process focus does not rest merely on the rejection of outcomes, however. Processes are preferred because that is what education is all about--the acquisition of coping mechanisms (p. 3).

Since it was hoped that in an effective problem-solving training program the productive and desirable outcomes of problem solving would be maximized and that subjects would be able to pick the most appropriate courses of action in problem situations, it was decided that it was not necessary to pledge allegience to either side of the process vs. product controversy. Due to a commitment expressed herein to precise and valid measurement

of the problem-solving behaviors under investigation, it was decided that criterion measures of problem-solving effectiveness always would have to include assessment of both process behaviors and the product of such behaviors.

Three instruments which have been developed as measurement devices for decision-making skills include the Townsend-Smith Test of Decision-Making Ability (Townsend and Smith, 1964), the Decision-Making Index (Dilley, 1965), and the Case Development Questionnaire (Halpern, 1967). Two of these instruments have as their prime concern each subject's answer to a problem, and do not emphasize assessment of the problem-solving behaviors emitted to that point. A subject simply needs to know the rule or principle by which to choose solutions. The Decision-Making Index give only passing consideration to the specification of possible outcomes and to their desirabilities and probabilities of occurrence. However, it requires the subject to go through, at least on paper, some problem-solving behaviors (e.g., calculations of the likelihood of outcomes), something which does not occur in the Townsend-Smith instrument. Only Halpern's assessment technique gives emphasis to behaviors emitted prior to the solution, and only this device approaches the measurement of problem-solving behaviors in a situational context as opposed to having each subject react only to contrived paper-and-pencil situations. None of these three instruments evaluates each subject's performance of desirable problem-solving behaviors while he deals with his own life problems.

From the review of criterion instruments, and discussions of evaluation concerns, it was concluded that it was desirable to specify more precisely the problem-solving behaviors being measured, more closely to approximate real-life problem settings when measuring such behaviors, to assess both the process and the product of problem-solving, and to move in the direction of making provision for dealing with a subject's own real-life problems. The study of these three instruments led to a belief that problem-solving behaviors in at least simulated life situations can be measured if such behaviors are first specified operationally. It was postulated that the development of a comprehensive training program for problem-solving behaviors would make it feasible to manipulate various "givens" in the problem situation in order to assess both the performance of process behaviors and the effectiveness of the final solution. Unless some type of simulation or real-life procedure was used as an assessment strategy, it was felt that it would be impossible to get a realistic assessment of the process of problem-solving behaviors dealing with real-life, personal problems. While it was not anticipated that anything close to the ideal measurement instruments could be developed in one attempt, a decision was made to develop criterion measures specifically for this project and, in this way, possibly to overcome some of the weaknesses of previous devices.

Three assessment devices incorporated into the pilot study described in an earlier section of this chapter resulted from the developmental efforts of this project and provided the groundwork for future design of evaluation strategies for the training program. The "Checklist for Solving Problems in Real Life" was an attempt to get students accurately to report on their perceptions of their existing problem-solving behaviors. It was intended that this instrument be used to collect baseline data prior to students' exposure to training and to provide post-training data later. The advantages of the two simulation criterion measures included the standardization of problem situations across subjects and the individualized real-life problem situation which was approximated in the second instrument. Behaviors exhibited in these simulations had

the attributes [illegible] quantifiable and thus amenable to statistical analysis. While it might be argued that the amount of time available to subjects in simulation tests like these should be unlimited, most life problem situations seldom have such temporal freedom. The time limits established should not be too restrictive, it is true, but preliminary trial testing indicated that within 15 minutes most of the information available in each simulation could be obtained.

From the pilot study, several suggestions were derived for further improvements in procedures, instruments, and these ideas will continue to influence subsequent developmental work on the training program. For example, since it is important to assess the quality of the problem solution selected by the student, it was decided that problem-solving simulations primarily the information available in such situations must be controlled in order to make the alternative problem solutions scalable in terms of appropriateness. In addition, it was decided that if measures of change in self-reported problem-solving behaviors are used, the effect of criterion experiences must be partialled out and several data-gathering points over time must be included. A third suggestion was that research on phenomenon such as real-life problem-solving must involve administration of multiple but comparable criterion measures on occasions separated by meaningful time intervals. These multiple criterion measures should include several measures administered relatively close to the end of the treatment procedures but separated from each other by at least one or two days. Also needed are follow-up measures which are further removed in time after the treatments and which attempt to assess the transfer of the acquired behaviors to students' real-life situations.

Additionally, it was recommended that some measures which are parallel to one another in terms of the type of data they collect, must be administered before and after students are exposed to segments of treatment procedures in order to provide evidence regarding the changes in behavior wrought by training and to indicate needs each student might have for additional training experiences. It was also recommended that some parallel simulations must be developed and refined to encompass all the effective problem-solving behaviors, not just those in one skill area. With such measures, meaningful steps could be taken to ascertain student profiles of development in a number of skills areas over time. As was mentioned earlier, attempts will be made to consider these suggestions during future stages of development of evaluation instruments and procedures for the personal problem-solving training program.

Current Status and Plans for the Personal Problem-Solving Training Program

During field test activities scheduled following this project's termination, parts of the training program summarized in this chapter will be implemented. A number of students will be exposed to program instructional, counseling and evaluation materials and procedures and data will be gathered relative to their effectiveness so that continued revisions can be made. While the materials and ideas which currently make up the personal problem-solving training program have in one sense been exposed to a continual evaluation as they

were initially designed, revised, and incorporated into units for student and school staff use, no real experimental tests of their effects have occurred outside of the comparison of potential instructional strategies in the pilot field described earlier. The opportunity to field test elements of a coordinated prototype training program provides the first example of this type.

It is anticipated that in line with the systems approach outlined throughout this report, those elements of the program which do not achieve the student outcomes for which they were designed either will be modified on the basis of field test feedback or completely removed. Also, it is proposed that data will be collected relative to a wide variety of effects associated with this program, not just those specifically intended. Examples of such side effects are administration time and costs, type of personnel needed to effectively execute the program, and the impact of particular school policies and procedures (e.g., class period time blocks) upon the actual effectiveness of the program.

One topic of research which must receive extensive future investigation similar to that being conducted by D'Zurilla and Goldfried (1968) and Goldfried and D'Zurilla (1969) involves more of an empirical approach to the identification of problem-solving behaviors than was used in the strategy (i.e., the review of existing professional literature and opinion) adopted in this project. One possible approach might involve identification of those individuals judged to be effective and ineffective personal problem solvers and subsequent intensive study of such persons in order to identify those behaviors which differentiate between the two groups. The use of such an approach in the future could either validate or result in the modification of the behaviors identified in this project's problem-solving paradigm, and therefore, could improve the developmental efforts described throughout this chapter.

Attempts must be made in future research and in selecting students for problem-solving training to discriminate more accurately between effective and ineffective problem solvers in order to assign students to the most appropriate training strategies and to assess the effects of these various strategies. In conducting such studies, an inactive control group must be instituted in order to attain accurate records of students' baseline behaviors on the dependent variables.

APPENDIX--CHAPTER VII

Catalogue of Available Materials

The American Institutes for Research has developed the following materials related to Component #4.

1. Overview Materials

   a. A student handbook and an administrative handbook introducing the need for, and rationale of, the Program for Effective Personal Problem Solving, its general objectives, and the roles of students and administrators.

   b. A script and 16mm film introducing the six skill areas, and exercises in which these are seen, reviewed and explained.

   c. A student placement test.

   d. Specific program objectives.

   e. A list of problem-solving behaviors.

2. Training Materials

   a. A handbook describing the training program for personal problem solving behaviors and detailing materials and procedures for implementation.

   b. A variety of materials for each of the problem solving skill areas. These vary but include scripts and audiotapes dramatizing relevant behaviors, student work booklets and instructions for simulating appropriate activities.

For more information, write to

Guidance Research Program
American Institutes for Research
P.O. Box 1113,
Palo Alto, California 94302

CHAPTER VIII

COMPONENT NO. 5--FORMULATING AND PURSUING PERSONAL GOALS

The purposes of the Comprehensive Career Guidance System are not limited to helping students acquire information about themselves, learn about available personal choice opportunities, and develop skills in personal problem solving. These efforts would result in few long-term benefits to students unless the system went further to assist each student in formulating both immediate and long-range goals in the various life areas based on the information and skills discussed in the four previous chapters. That is, a major aim of the system is to help each student plan wisely for the future by encouraging him to consider both the realistic probabilities and the possible consequences of actually achieving a wide variety of potential goals, to select those goals which he has a likely chance of reaching and which will probably afford him satisfying consequences, and to pursue his goals with sufficient flexibility to take advantage of new opportunities and changing circumstances. The general purpose of this chapter is to describe the special emphasis that this guidance system places on students learning to direct their own lives through goal selection and self-management of activities related to the pursuit of their goals.

Identifying Student Goal-Setting Needs

Since the concept of "informed choice" is one of the major underlying assumptions of the Comprehensive Career Guidance System (cf. p. 15 of this document), it should be examined in light of the basic arguments for the case that goals serve as significant regulators of human behavior (Locke, 1968).

Most human behavior is purposive, i.e., it is directed by goals and intentions (Dulaney, 1968; Ryan, 1958). The most immediate motivational determinant and also the best predictor of human behavior is what an individual is trying to do. Goals are directive in nature. They guide an individual's thoughts and overt behaviors to one end instead of another. Because the pursuit of certain goals requires more effort (both mental and physical) than others, goals not only direct action but also regulate the varying degrees of effort expended. If, for example, an individual decides to attend a university extension course evenings rather than to watch television, this action necessarily requires the expenditure of more effort than TV viewing would have demanded. Not every goal, however, leads to the activity or end specified by the goal. A particular goal might not lead to desired outcomes because it conflicts with an individual's other goals or with external factors which might impede his performance. Or, an individual might not have adequate knowledge, abilities or commitment to formulate feasible goals or to carry out his plan of action. In general, even action that is not consummated is usually guided by goals and may still be highly correlated with the action originally intended.

Individuals select specific goals on the basis of: (1) their more general goals and values; (2) their knowledge of both their abilities and the requirements of goal-related tasks; and (3) their interpretation and evaluation of the alternatives open in a given situation. After goals have been set, human actions directed toward these selected ends result in either satisfaction or dissatisfaction. An individual's degree of satisfaction with an object or situation usually is based on: (1) the amount of difference between what he originally wanted (i.e., the behavioral outcomes described in his goals) and what he perceives he is getting; and (2) the priority he

has given to goal(s) involved. Expectations of experiencing reinforcing consequences (incentives such as social praise and money) affect behavior as a result of their influence on an individual's goals. They affect action to the extent that they originally influenced goal-setting (Locke, 1968).

The contention that meaningful human action involves a great deal of individual goal setting and related achievement activity is supported by many surveys of student needs and follow-up studies which were cited in previous chapters (III, V, and VI). In these investigations individuals frequently indicated that they had not received adequate assistance (during their school years) in selecting the kinds of life goals which, if pursued and eventually attained, would be likely to furnish the personal fulfillment they reported lacking. Furthermore, career development theorists (e.g., Super, 1970) along with other investigators of life patterns among American youth (e.g., Hurd, 1970; Janne, 1970) have suggested that never before has there been a greater need for individuals not only to be able to set goals wisely but also to recognize when changes in them must be made and to make them. The classical pattern of an individual having a schooling phase, a working phase, and a retirement phase is changing fast. A student leaving school is finding that he must resume his studies again and again if he desires to keep up with the increase in scientific and technical knowledge. He must not only renew his knowledge of his own special area, he must be ready to prepare either for a new occupation within the same occupational area, or even for an entirely different occupational area. Teaching people to adapt to change is rapidly becoming a primary aim of American education. In this context, an individual's lifetime will be filled with choice points more than ever before. This will require both a heightened sense of personal commitment and responsibility to the setting and pursuit of goals and increased skills in making plans, decisions, and adjustments.

Project staff identified what are apparently basic student needs regarding their educated involvement in formulating and pursuing meaningful goals. For example, students need to understand important distinctions such as between tentative and definite goals, singular and alternate goals, and challenging and easy goals. They need to recognize the activities included in planning for goal selection, in selecting primary and alternate goals, and in managing a person's progress toward achieving his goals. They also need to learn how to develop tentative and alternate plans for getting to goals. Furthermore, students need both practice in conducting planning, decision-making, and self-management activities in relation to other peoples' lives, and utilization of these skills in exploring actual goals that are possible in their own lives. These statements of needs, in turn, were changed into an instructional objective format that included the listing of behaviorally explicit student outcomes. Some examples of the objectives are shown below.

The following instructional objectives illustrate those that were written to define the individualized guidance programs which were developed in the educational and vocational areas of student goal-setting. These examples show that students first learn to set tentative and alternative goals for a fictitious student; then to plan and select their own long-range educational and vocational goals; and finally to work toward immediate instructional goals (i.e., objectives) which were formulated in part on the basis of their long-range goals and which are contained in computer-generated programs of studies.

OBJECTIVE: To point out, from educational and occupational opportunities which are available, those which a student who is described to you might consider in planning his future.

Student Outcomes:

1. Choose from a list several educational and occupational opportunities (at least 3 of each) a student should consider exploring. Base your selection on the information you have about the student's

   a. abilities.

   b. interests.

   c. values.

   d. physical attributes and health.

   e. personal and social behaviors.

2. Provide one acceptable reason for each choice you made for this student.

3. Indicate whether several opportunities (at least one educational and one occupational) a student has chosen to explore are desirable for him based on the information you have about him. In each case indicate the likely results if he does explore it.

OBJECTIVE: To show that you have explored several alternative educational and occupational opportunities and that you are now considering the likely consequences to you of choosing each.

Student Outcomes:

1. Explore at least one alternative educational or training opportunity and summarize information about it on an "Educational and Training Exploration Checklist."

2. Explore at least one alternative occupational opportunity and summarize information about it on an "Occupational Exploration Checklist."

3. Explain the information from at least two checklists to a small group of your classmates so they understand what you think would happen to you if you (given your current personal characteristics) chose to pursue these opportunities.

OBJECTIVE: To select the most appropriate first and second choice occupational and educational goals for a student based on a description of both the student and the opportunities open to him.

Student Outcomes:

1. Select from a list of opportunities the most appropriate first and second choice educational and occupational goals for a student. Base your selections on the information you have about the student's

   a. abilities.

   b. interests.

   c. values.

   d. physical attributes and health.

   e. personal and social behaviors.

2. Provide one acceptable reason for each choice you made for this student.

3. State if either an occupational or an educational goal a student has selected would be desirable for him to go after, and what would probably happen if he did. Base your statement on the information you have about both the student and the opportunity.

OBJECTIVE: To explain the difference between tentative and definite educational and occupational goals and plans, and recognize advantages of keeping your current goals and plans tentative.

Student Outcomes:

1. Define the words tentative and definite.

2. Recognize that keeping plans tentative leaves any number of educational and occupational goals open.

3. State at least one advantage of keeping goals and plans tentative.

OBJECTIVE: To select your own first and second choice educational and occupational goals.

Student Outcomes:

1. Select from a list of opportunities you have explored previously your first and second choice educational and occupational goals. Base your selections on the information you have collected about your

   a. abilities.

   b. interests.

   c. values.

d. physical attributes and health.

e. personal and social behaviors.

2. Record both your first and second choice goal selections on Tentative Post-High School Program of Action charts.

3. Evaluate these educational and occupational goals (during conferences with one of your parents or guardians, and with one of your teachers or your counselor) by:

   a. providing at least one acceptable reason for each goal you selected.

   b. summarizing possible negative conditions which might cause you to switch to your second choice goal or to other alternatives.

   c. revising your "program of action," if necessary.

OBJECTIVE: To carry out your plans for achieving your first choice educational and occupational goals.

Student Outcomes:

1. Identify hang-ups that might change your goal.

2. Recognize changes in personal characteristics as cues for possible changes in goals and plans.

3. Recognize social, economic, and technological trends as cues for possible changes in goals and plans.

OBJECTIVE: To point out the things you have done which have helped you to make progress toward achieving your educational and occupational goals, and the things which may have held you back at times.

Student Outcomes:

1. Identify both positive and negative outcomes of a person's efforts toward achieving his educational and occupational goals based on information about that individual's life.

2. Evaluate your own efforts toward achieving your educational and occupational goals, and make tentative plans for altering either your goals or plans, (or both) if necessary.

OBJECTIVE: To recognize the purpose of your Program of Study (POS) and to explain your own POS printout.

Student Outcomes:

1. Define POS and describe its main purpose.

2. Identify persons responsible for your POS.

3. Identify when and how your POS may be changed.

4. Read and understand your own POS printout.

The student objectives and outcomes listed above are derived from student needs, in the educational-vocational content areas, which are judged to be developmental, i.e., needs which every student has. Instructional objectives, which define the range of opportunities that students have for selecting and working toward goals in both the personal-social and academic-learning need areas are discussed in detail in chapter IX of this document since setting individualized behavior change goals in these need areas is a part of the prescriptive phase of the CCGS. In addition, no examples of objectives translated from student goal-formulation needs in the citizenship content area are included in this section because neither this project's staff nor other organizations (based on a review of materials available nationwide) have generated citizenship objectives focusing on student planning, decision-making, and implementation skills related to personal goal formulation.

Classifying Objectives by Commonalities and Assigning Priorities

An attempt to find commonalities among the various goal-setting needs and related objectives resulted in the four following major groupings based on the personal problem-solving model described in the previous chapter.

Decision-Making Emphasis

Both planning and performance activities are involved in the objectives categorized here. Decision-making behaviors are those involved in actual choice or selection of an alternative, and a second choice. After a decision is made, (i.e., a goal is formulated) plans are selected for implementing that decision.

1. Considering alternatives. This category includes objectives which specify behaviors concerned with the formulation and consideration of several viable alternative goals. Estimating both objective and subjective probabilities of outcomes associated with each alternative is emphasized.

2. Selecting the most desirable goals and plans. This category includes objectives specifying behaviors that bring about the selection of the first choice goal, a backup or alternative goal, and a plan to be carried out while working toward the first choice goal. Stress is placed on the importance of tentative and alternate planning, which encourages individuals to make revisions if they find that their original plan is not appropriate.

Implementation Emphasis

Objectives categorized in this area involve activities which have been referred to as "student managed performance," i.e., the self-directed responses of an individual working toward desired goals. However, both

planning (relative to revising or changing plans for implementation) and decision making (relative to evaluating implementation efforts) are involved in these activities.

3. Carrying out plans. This category includes objectives which specify the schedule and performance levels necessary for carrying out the plan for goal achievement. An individual has to make decisions to adjust as changes occur in his goals or in the opportunities available to him. Contingent upon his evaluation of the progress he has made, an individual may switch either to his second choice goal or plan, or to alternatives.

4. Finding out if it works. This category includes objectives which specify behaviors performed by an individual when he judges whether his goal has been achieved, describes what helped or hindered his efforts along the way, and verbalizes principles and techniques which he has learned as a consequence of his goal-achievement experience and which he will probably find valuable in relation to future goals.

Specifying Alternative Strategies for Fulfilling Student Goal-Formulation Needs

A limited number of guidance-related instructional and counseling strategies for helping students to set and achieve personal goals has been developed and field tested. Project PLAN is an example of these strategies. PLAN students are introduced to the steps involved in a systematic approach to decision making through reading descriptions of decisions made by high school students such as those in Project TALENT (the longitudinal study of 440,000 students). For example, on the basis of information presented about the goals, abilities, interests, and values of a case individual, a few appropriate occupational goals are provided. Students explore the advantages and disadvantages of each of these and then compare their tabulations with an analysis of the case individual's desired outcomes based on both the case individual's values and his situational constraints. Students eventually select one of the occupational goals for the case individual on the basis of this comparison. The selection process also includes discussions of the consequences of choosing each of the other alternatives. It is expected that by reading and studying several such case studies students will reach a level at which they are making decisions wisely before they are called upon to make decisions about their own goals and plans. A computer evaluates and records each student's progress with respect to these decision-making skills.

When a PLAN student has a complete overview of the major occupations included in 12 long-range occupational goal groups which include the educational and ability requirements for each, and has a good understanding of his abilities, interests, and values in relation to these groups, he employs his skill in decision-making to explore the probable consequences of various alternatives and finally makes a tentative selection of a long-range occupational goal. Each student's performance on various types of tests and inventories are stored in a computer for ready access. The exploration process includes furnishing each student with information on his own developed abilities to perform in relation to those of persons entering

occupations in various fields. This is done by estimating the student's expected twelfth-grade score and its probable error of estimate from his score on a test given in the ninth, tenth, or eleventh grades. For each of his scores, a student is given a band indicating the level at which his score is likely to fall in the twelfth grade. This percentile range may be compared with profiles comprised of scores made by original Project TALENT students who later were entering, or planning to enter, occupations in various areas. The fact that the score on any test provides only a rough estimate of each student's present performance levels and that his performance with respect to any ability may be increased by engaging in special learning activities is emphasized.

In the next step, each student is assisted to prepare a program of studies which will enable him to achieve his tentative long-range goals. Each student's program of studies is comprised of a number of two-week modules which specify the learning activities assumed to be helpful to him in reaching his goals. The computer generates a program of studies for each student primarily on the basis of these three information sources: (a) both the student-parent selected long-range goals and the data-suggested goals for the student (i.e., goals suggested by comparing student data with the experience of previous students having similar characteristics); (b) the particular avocational interests indicated by the student; and (c) the state and local requirements in the various subject matter fields. Because the selection of a long-range goal and subsequent design of a program of studies remains tentative, it is possible in PLAN for students to change to any one of a number of other goals and related programs of studies if their subsequent experience indicates that this is appropriate.

Another strategy for assisting students to formulate and pursue educational-vocational goals was developed by this project's staff for the Santa Clara Unified School District in California. As in Project PLAN, students in the Santa Clara program first gain basic skills in generating and considering alternative educational and vocational goals by studying a series of possible choices being made by students like themselves. Case studies provide information about some or all of the characteristics of a hypothetical student, i.e., his abilities, interests, physical and health attributes, values, and personal and social behaviors, and about each opportunity open to him. Students are expected to compare the case individual's qualifications with the requirements of available opportunities, and to select the three educational and the three vocational opportunities which the individual probably should explore. After establishing competencies in selecting alternatives for other individuals, the students in the Santa Clara program are required to employ these skills in choosing three educational and three vocational opportunities for their own exploration. Their decision-making skills are developed even further when they are presented with another series of open-ended case studies which require them to choose appropriate first and second choice goals among the specific opportunities open to another hypothetical youth.

When students have completed their practice exercises in decision making, they are responsible for comparing their own personal characteristics with available opportunities and for selecting their own first and second choice educational and vocational goals which would tentatively regulate both their high school and post-high school performance. Emphasis is placed on the necessity for viewing these goal selections as tentative

since, over time, a person's characteristics will change as will the availability of particular options. In contrast to Project PLAN which uses a computer to process both student-parent long-range goals and data-suggested long-range goals into programs of study, the Santa Clara program has each student participate with his parents and school staff in translating both his long-range goals and related personal assessment data directly into alternate action programs for reaching his goals. Also included are reviewing exercises which alert students to changes related either to themselves or to their goal opportunities that may require alterations in their original goals or plans.

In order for students to be able to select personal goals wisely, Katz' (1959) decision-making program for eighth graders suggests one means of helping individuals to establish a framework for processing and evaluating information about both themselves and various educational and occupational alternatives. In the booklet, You: Today and Tomorrow, which comprises all instructional materials in Katz' program, students learn about the varying ways that a person's abilities, interests, and values can affect his selection of particular educational and occupational goals. In addition, students learn how to collect information about their personal characteristics, and to explore three educational and three vocational goals by finding out the basic requirements for each and by relating these to their personal qualifications. To give students practice in examining the relationship between decisions and outcomes, they study a series of case studies in which students like themselves made decisions about goals and then experienced the consequences of their subsequent efforts toward achieving them. Finally, each student selects a high school course (e.g., College preparatory, General Business, etc.) which includes the subjects that might be required or very helpful in getting to his long-range educational and occupational goals. Unlike the Project PLAN and the Santa Clara Educational-Vocational guidance programs, Katz does not organize his instructional methods and materials into a set of learning units which contain behaviorally explicit student objectives and related criterion tests.

The Effective Problem Solving counseling model (Magoon, 1969) was designed to help college students develop skills for setting and working toward both educational and vocational goals. The program first instructs individuals in the six steps deemed to be necessary in effective problem solving. Then they apply these steps to their own problems, that is, those problems included in resolving educational-vocational uncertainty by helping youth commit themselves to tangible goals. Each student searches for relevant information about the problem, considers the data he finds, and generates several alternative plans of action based on the relevant information he has gathered and evaluated. The model is structured both in sequence and in format. The sequence follows these steps in problem solving: 1. Defining the problem; 2. Gathering relevant information; 3. Weighing the evidence gathered; 4. Choosing among alternative plans or goals; 5. Taking action on plans chosen; 6. Reviewing a plan periodically. The format consists of a systematically arranged series of questions divided into various mimeographed parts. The student writes answers to each question, a process which is intended to bring coherence and sequence into his problem-solving behavior. The counselor, in turn, reviews the student's responses when each part is finished and adds questions or observations where they seem appropriate. Working in groups of from one to five, students typically require six to eight sessions to complete Magoon's program. While Magoon's

program employs virtually the same problem-solving model related to educational-vocational goal formulation as is found in the three programs previously discussed in this section, he has designed both his materials and structured interaction mode specifically for a college student population rather than for junior and senior high school students.

Individually Prescribed Instruction (IPI) represents an alternative instructional-counseling strategy (grades K-6) in which instructional objectives are correlated to diagnostic instruments, instructional materials and methods (see chapter appendix for reference information). A key feature of IPI is the provision for assessment of student abilities and performance and continuous monitoring of student progress. Each student is assessed as to his state of learning prior to entering a particular instructional situation. After beginning an instructional program, the student's work is guided by a written prescription designed to meet his individual needs and interests. Data used both when originally making up prescriptions and when modifying them if necessary include: (1) the student's general ability level in a particular subject; (2) the degree of mastery the student has demonstrated on each skill in the specific unit that will be assigned to the student, (3) information about the student's progress in previous units related to the skills in the current unit, and (4) information about the student's progress as he accomplishes the various tasks related to the particular unit assigned. IPI, as an individualized educational system, is being revised and refined in the direction of involving the student more in the management of his own learning. That is, IPI is gradually attempting to place increasing emphasis on helping students to formulate their own goals, to decide among available resources for learning, to use a variety of information in decision making, and to evaluate the outcomes of their decisions and goal selections. The information and record-keeping system related to student data is being geared to student use while the activities of teachers and counselors are being focused on encouraging student responsibility for learning, for review and evaluation of learning outcomes, and for changes in goals or plans where needed. To date, IPI has focused exclusively on developing an individualized educational system for elementary school students, and as a result has not included an emphasis on student long-range educational-vocational goal formulation which is characteristic of the other programs described in this section.

A program that focuses not on helping elementary students to select and manage their learning goals but rather on assisting ninth graders in learning to select both high school and post-high school educational goals wisely has been developed in the Palo Alto Unified School District in California (Yabroff, 1969). The Palo Alto program emphasizes helping the student learn how to choose rather than what to choose, and providing him with information for his goal selections based on the experiences of recent graduates from his school whose academic performance was similar to his. Through reading in a booklet students are exposed to three aspects of effective decision making: (1) having specific facts about the importance of making a choice wisely, (2) acquiring information about available alternatives, and (3) estimating possible consequences. Each student is given the decision-training booklet along with his own grade-point average achieved in the ninth grade. With his grade-point average, the student can work with data compiled in various experience tables found in the booklet. The experience tables were comprised primarily from two sources: (1) the high school

transcripts of students in the preceding graduating classes, and (2) simplified follow-up studies of these same graduates. Experience tables thus were constructed on the major high school courses taken by these former students, the post-high school activities entered, and their performance in the first year of two of college. As a result, these tables enable current ninth graders, knowing their own grade-point averages, to examine what happened to students like themselves as they went through high school and beyond. Students, however, are cautioned that while the experience tables give some indication of what their chances are in the pursuit of a particular high school program or post-high school goal, the tables do not solve problems or make decisions. That is, students are encouraged to believe that they are essentially free to make choices and to carry out action programs that might considerably alter the probabilities of success based on what happened to former youth from the Palo Alto district. In contrast to the other programs described in this section (except IPI), the Palo Alto program focuses exclusively on helping students to set long-range educational goals and does not emphasize the making and implementing of alternate plans for reaching them.

Although the alternative instructional-counseling strategies presented so far relate to educational and vocational goal setting, mention should be made of the strategies available in this project's Personal and Social Development Program. Goal formulation plays an especially important role in the program's prescribed learning experiences, which are in the prescriptive phase of the CCGS. In the prescriptive phase, students engage in instructional-counseling activities only if they need them, and the students are given major responsibility for assessing data which might suggest they have personal and social development needs and deciding if they have problem areas on which they want to work. Hence the student identifies goals regarding his personal and social behavior which he would like to reach but is not currently capable of achieving. Two levels of goal formulation are incorporated into the PSDP at both the intermediate and secondary levels. The initial goal selection made by the student pertains to the direction in which he wants to modify his behavior. He may either improve his negative behavior, encourage desirable behavior currently in his repertoire but which needs to be strengthened, or produce new desirable behavior which he is not currently exhibiting. The second type of goal selection relates to the specific behavior that the student wants either to reduce, encourage, or produce. It is the student's own commitment to modify a specific behavior in a particular direction which makes this program unique. Strategies for presenting the consequences of selecting the various personal and social behavioral opportunities could have included such approaches as filmed, video-taped, audio-taped or written models enacting the differing outcomes, or group discussion and role play of the various consequences. Strategies regarding goal formulation in the personal and social needs area as well as in the academic-learning needs area will be described in greater detail in chapter IX of this document.

Selecting, Designing, Scheduling, and Implementing Strategies

The goal formulation approach employed in this project stressed the use of instructional-evaluational units in which a variety of instructional-counseling strategies were organized into units for students. Guidance learning units were designed for grades 7 through 12 on either an individual, small group, or classroom basis. As in most units illustrated in previous chapters, through this format the student is given: (1) the instructional

objective for that unit, (2) a list of the behaviors he should be able to demonstrate if he has reached the objective, (3) a sample question to indicate how the terminal behaviors would be assessed, (4) a list of the available materials, and (5) suggested activities which should help him achieve the objective. When he is ready, the student takes an end-of-unit proficiency test to determine whether he has mastered the stated objective. Table 11, on the next page, presents a guide sheet from one of the guidance learning units that focused on preliminary activities related to student formulation and pursuit of educational and vocational goals.

Generally, goal formulation in this project's Personal and Social Development Program is scheduled during the initial stages of the program at both the intermediate and the secondary levels. After students at the intermediate level have agreed to work toward a general goal (e.g., to work on a booklet which will help them improve their undesirable behavior), they are asked to select a more specific goal, i.e., a specific behavior they would like to change. For example, the booklet designed to improve behavior in the area of carrying through on tasks with responsibility and effort states:

> Choose a behavior that you would like to work on. Select the one that is of most concern to you now. It should be a behavior that would bring you the best results if you changed it. Because this one behavior stops you from doing a good job and from completing your tasks on time, it is a problem for you. This is the behavior you will work on for the rest of this booklet.

A similar process is involved in the intermediate level booklets selected by those students who desire to encourage or produce behaviors. Once again referring to the area of handling tasks responsibly, the objective for Step 2 in booklets in this area is:

> STEP 2. You will be able:
>
> a. to list alternative ways of becoming responsible and showing effort more often;
>
> b. to identify possible results of becoming even more responsible and showing even more effort;
>
> c. to decide if you want to work further on this booklet; and
>
> d. to choose a behavior to work on and decide what to do with it.

At the secondary level, the orientation booklet, "Chance to Change," presents students with four alternatives for PSDP participation. These four are:

> a. to improve your undesirable behavior;
>
> b. to encourage or maintain your desirable behavior;

TABLE 11

EXAMPLE GOAL FORMULATION GUIDANCE LEARNING UNIT

American Institutes for Research
Guidance Research Program

Santa Clara NDEA Project
June 1970

SKILL AREA 3
OBJECTIVE 2

CHECK IT OUT!

OBJECTIVE: The purpose of this unit is to:

show that you have explored several alternative educational and occupational opportunities and that you are now considering the possible consequences that might happen to you if you chose to pursue each opportunity.

EVALUATION: To help you make sure that you have achieved this objective, you will be tested to see if you can:

a. explore at least one alternative educational or training opportunity and to summarize information about it (or each of them) on an "Education and Training Exploration Checklist";

b. explore at least one alternative occupational opportunity and to summarize information about it (or each of them) on an "Occupational Exploration Checklist"; and

c. in a group discussion with some of your classmates, explain the information from two of your checklists by relating that information to your current personal characteristics so these students can understand what you think would happen if you chose to pursue these two opportunities.

EXAMPLES: When you can answer questions like the ones given below, you probably are ready to take the test which follows this learning unit.

For the occupations you explored, can you answer the following questions?

1. What things do all those occupations have in common?
2. What did you expect these occupations to be like before you explored them? How, if at all, have you had to change these expectations after you explored these occupations?
3. What level of responsibility and decision making is required in each occupation explored?
4. Would you consider any of these occupations in your future career decisions?

USE THESE MATERIALS	DO THESE ACTIVITIES
1. Instructional Guide	1. Read Parts I and II, "Why Explore High School and Post-High School Educational and Occupational Opportunities?," and "Why Is It Important to Have a Plan for Exploring Educational and Occupational Opportunities?"
1A. OPTIONAL ACTIVITY Instructional Guide Problem Solving Kits: *Job Experience Kits*, Science Research Associates, 1970. *Careers in Banking* (16mm film) *Student Response Booklet* *Student Resource Guide* California Bankers' Association, 1966. *Vocational Education Job Opportunity Series* 8mm films Encyclopedia Britannica Educational Corporation. *Widening Occupational Roles Kit* Kit: Science Research Associates.	1A. If you want additional ideas for exploring occupational opportunities, read Part III of the Instructional Guide, "Occupational Exploratory Material." It describes the other material listed in the left-hand column for this activity.
2. Checklists: *Education and Training Exploration Checklist* *Occupation Exploration Checklist* American Institutes for Research, 1970.	2. You should now be ready to use the "Education and Training" and "Occupation Exploration" checklist to investigate in more detail: (a) one educational or training opportunity; (b) one occupational opportunity.
3. Instructional Guide *Student Reaction Sheets*, Skill Area 3, Objective 2, American Institutes for Research, 1970.	3. Once you have completed a checklist for each of your two educational and occupational opportunities, let your teacher or counselor know you would like to sign up for the group discussion which is the last activity of this learning unit. When your group meets, you will be discussing the points listed in Part IV of the Instructional Guide.

When you have successfully completed the above activities, check with your teacher or counselor before taking the test which accompanies this learning package.

c. to produce new desirable behavior;

d. not work on your behavior.

If a student selects "d" as his goal, he can decide to opt out of participation in this area of the program at this time. If he selects alternative "a", "b", or "c" he moves on to the second goal formulation stage in which he selects a specific behavior to modify in the direction he has chosen. A more detailed account of goal formulation approaches in the PSDP is presented in chapter IX of this document.

Evaluating Strategies and Providing Feedback and Correction

The effectiveness and efficiency of strategies employed in the CCGS should be evaluated on the basis of whether each student's goal-formulation needs are being satisfied, i.e., the extent to which students are achieving both their short-term and long-range goals. Norm-referenced measurement, the traditional strategy for determining individual differences, is of little use in the context of an individualized guidance system because it merely provides a basis for comparing the outcome levels of two or more individuals with each other (Carver, 1970). Rather, what is needed are evaluation instruments and procedures capable of assessing each student's knowledge, attitude, and performance outcomes related to meaningful standards of individual achievement. When desired outcomes are designated in observable and measurable terms, it becomes readily apparent when the methods have succeeded in helping students to reach objectives and goals, when they have failed, and when they need further development to increase their effectiveness (Bandura, 1969).

Criterion-referenced measurement techniques are particularly appropriate for evaluating the effects of a guidance system designed to aid individual goal formulation and planning since these techniques are concerned primarily with measuring the accomplishment of specified objectives. Popham and Husek (1969) illustrate this point when they use the analogy of the dog owner who wants to keep his dog in the backyard and therefore gives him a fence-jumping test. The owner wants to find out how high the dog can jump so that he can build a fence high enough to keep the dog in the yard, i.e., a criterion-referenced test. How high the dog can jump compared to other dogs is irrelevant, i.e., a norm-referenced approach. However, a major difficulty in evaluating the strategies included in an individualized guidance system has been the unavailability of adequate criteria for assessing the effectiveness of responses involved in the individual planning, decision-making, and self-management processes related to personal goal formulation. The model of effective personal problem-solving processes that has guided our writing of instructional objectives and related behavioral outcomes is described in detail in chapter VII of this document. As a practical matter, it must be recognized that these processes are merely theoretical constructs. The point is that they cannot be measured directly. In lieu of direct measurement, a set of tasks that are judged to be valid behavioral indicators of a particular process must be designed. For assessment purposes, either performance on this set of tasks is rated or successful instances are counted on some arbitrary basis. Then the resulting score serves as a "measure" of the underlying process (Garvin, 1970).

Criterion-referenced measurement is feasible to the extent that behaviorally stated tasks correspond to some subsequent, extra-classroom task that must be performed at a predetermined (i.e., criterion) level of performance. However, the responses of seeking and evaluating information, making choices among career options, and managing progress toward goals are recurrent activities which extend over the lifetime of an individual. There is no single moment at which a person decides permanently upon one out of all possible options. Rather, there are many crossroads at which his life takes decisive turns, which place constraints on the range of future alternatives and which constitute periodic instances of goal selection and goal pursuit processes. What is needed are criterion measures that permit assessment (both in a timeless as well as a real-life environment) of minimum levels of information gathering and processing, goal selection, and self-management behaviors that are judged to be necessary in order for a person to be able to set and to work toward goals wisely. As reported in chapter VII, the question of whether to set standards either in terms of the process of goals selected and pursued, in terms of the content of these goals, or in terms of both has not been empirically answered. Katz (1969) has stated the case for emphasizing process criteria in the evaluation of strategies used in an individualized guidance system:

> Without directing the content of an individual's choice, we do think we can help him in the process of choosing. This emphasis on process does not pretend to insure the "right" choice. Our conviction is that in education enlightened processes are intrinsically important. Therefore, we bend our efforts to increase the student's understanding of the factors involved in the choice (imperfect though our own understanding may be) so that he can take responsibility for his own decision making, examine himself and explore his options in a systematic and comprehensive way, take purposeful action in testing hypotheses about himself in various situations, and exercise flexibility in devising alternate plans. (p. 17)

In many of the guidance proficiency tests developed in this project, student competencies in collecting information about themselves and related life opportunities, in estimating and evaluating the probable consequences of varying alternatives, in making tentative goal selections, and in carrying out a plan of action are assessed without having to wait until individuals formulate and pursue goals in their own natural environments. These criterion exercises, that assess student performance levels in selecting which goals would be appropriate for whom under what specific hypothetical conditions, have been described by Twelker (1969) as enabling performance measures. By means of simulation it is possible to set up an environment which is less threatening than the real world. Individuals can be assessed on their performance in gathering and using information wisely to select goals for hypothetical others without experiencing real world consequences. Measures for assessing enabling performances determine whether or not prerequisite behaviors, judged to be necessary for adequate performance on terminal objectives in a real life setting, have been acquired as a result of working through individualized learning units.

To assess student attitudes and performances related to the formulation and pursuit of their own goals, a "Goals and Behaviors" survey instrument was developed. The instrument starts by asking students whether they agree or disagree with a series of statements that begin "People should always

have specific goals...." Each of these statements is linked to a particular area of career goals, e.g., education, occupations, learning skills, and social relationship skills. After a student has checked his degree of agreement or disagreement, he is then asked either to select, from a list provided, or to provide a reason why he responded the way he did. Other sections of the survey instrument require the student to indicate his own attitudes toward having both career goals and plans for achieving them, and whether he presently has specific goals in the various career goal areas. If he responds that he has some specific career goals, the student is further asked to indicate the degree to which he has participated in the selection process (from selecting the goals without help from anyone else to having them selected for him by someone else). Finally, each student responds to several self-report items in which he recalls how many times during the past year he has sought help in relation to his goals or plans and with whom. In its present form, the "Goals and Behaviors" survey instrument can be used in connection with any of the various CCGS programs that promote decision-making and self-management behaviors. It can be employed to assess baseline and post-treatment attitude and performance levels.

In addition to simulation techniques and the "Goals and Behaviors Survey," check-off procedures have been employed in this project to validate student attainment of objectives related to the formulation and pursuit of personal goals. For example, in several proficiency tests written for learning units in this project's Educational-Vocational Guidance Program, students are required to meet with a parent or guardian and with a counselor or teacher in order to review how they have gone about selecting goals, setting up plans for carrying them out, and implementing the plans. It is the responsibility of these adults to check-off each student when he has demonstrated satisfactory levels of performance in these areas. Check lists of criterion statements are provided to these people to facilitate their evaluation tasks. In the Personal and Social Development Program, teacher and counselor observations as well as peer evaluations and students' own reports have been used to judge whether students have effectively taken responsibility for and carried out a plan for achieving their behavior change goals.

Current Status and Plans

The CCGS has developed programs which allow for students to participate in goal-selection and self-management activities in three of the six content areas, i.e., Educational, Vocational, and Personal-Social. Plans are currently underway for developing additional programs in a fourth content area, citizenship, based on the results of recent investigations into the delinquent behaviors of adolescents (e.g., Cureton, 1970; Jones, Rhetts, and Wolff, 1971). Cureton (1970), for instance, conducted an extensive search of the data resulting from administration of the tests and questionnaires of the Project TALENT battery, used in 1960 to assess the aptitudes, abilities, interests and other background information of over 440,000 high school students (Flanagan, et al, 1962), for possible predictors of adolescent problem behavior. Using the records of the schools, police juvenile decisions, juvenile court, social and mental health agencies, and health departments in a single county in which this battery was administered to all public, private, and parochial school students in grades eight through twelve, she obtained criterion data concerning the incidence, types, and characteristics of these students' problem behavior. Categories of problem behavior included:

delinquency, insufficient training, absenteeism, dropout, illegitimate pregnancy, emotional illness, and school disciplinary actions. The time period included was, for school records, through the date of graduation or final dropout and, for other records, up to 1965 when almost all the students were 17 years of age or older. Cureton reports a wide range of variables included in the TALENT battery which were found to be predictive, in varying degrees, of the adolescent problem behaviors thereby serving as a rich source of hypotheses for program developers. That is, certain of these variables, which point to inadequate opportunities students have had to acquire decision-making and self-management skills, could become the focus for prototype citizenship programs that would be evaluated in field settings.

Considerable research and development is needed in examining specific ways of helping adolescents make use of information in selecting goals. For example, this project's learning units which focus on information processing related to educational-vocational goal formulation (cf. Table 11) should be thoroughly evaluated. Problems such as assignment of subjective probabilities, criteria for evaluating information sources, and use of estimates of personal worth and values for specific factors must be explored (Thoresen and Mehrens, 1967). The current learning units dealt with preliminary steps in evaluating information and in making subjective estimates of: (1) how satisfying an occupation might be, and (2) how successful would the person be in meeting the requirements for achieving a particular occupational goal. However, the broad spectrum of factors to be considered in information processing was not included.

One area of future investigation might be the application of Miller"s (1970) work in professional decision making which suggests one means of helping an individual establish a framework for processing and evaluating information about alternatives. A "criterion hierarchy" which lists all the independent bases to be considered in selecting from among alternatives, is gradually developed and refined by each person. Monetary compensation, geographical location, and nature of work illustrate major factors in a criterion hierarchy. Miller suggests that each of these factors can be further subdivided into several areas, e.g., immediate starting salary and anticipated salary in five years.

Another area for possible future investigation would include an examination into goal-setting processes, and the relationship between these processes and both the content of goals and student performance in various career areas. In addition, this examination might include a study of content factors such as difficulty level, and specificity, and process factors such as personal involvement in goal selection, and knowledge of alternative goals.

In the area of evaluation, plans are currently underway for designing alternative ways of assessing the individual performance of each student. In the typical comparative group experimental design, the specific impact of each treatment on each student tends to be obscured. Some students demonstrate marked changes in criterion behavior while others fail to change. An attempt is being made to remedy this problem in a field test of the CCGS which is currently underway in several Houston, Texas and San Jose, California schools. Data collected during the field test will be analyzed to determine the relative effectiveness of CCGS and competing programs in helping each student to achieve his stated objectives and goals. A variety of measures will be used. For example, the proportion of treatment objectives that each student

has attained at the end of an experimental program will be computed and compared with the proportion he had achieved before the beginning of that program and with the total number of objectives possible for him. Procedures to evaluate individual student outcomes against pre-determined criteria must be developed and used in field settings to establish the empirical value of the various CCGS programs for helping students to formulate and to achieve their own goals and objectives.

APPENDIX--CHAPTER VIII

Catalogue of Available Materials

1. AIR* developed learning units prepared for individualized educational and vocational guidance programs.

   Helping Others Choose

   Check it Out

   First and Second Choices

   Tentative vs. Definite Plans

   Doing Your Own Thing

   Leisure Time Activities and Part Time Jobs Are Important

   Getting to That Goal

   Selling Yourself

   Reviewing Goals and Plans

   For more information, write to:

   Dr. Calvin D. Catterall
   Coordinator, Counseling and Psychological Services
   Santa Clara Unified School District
   1889 Lawrence Road
   Post Office Box 397
   Santa Clara, California 95052

2. AIR developed materials designed for a Personal and Social Development Program. For more information, write to:

   Guidance Research Program
   American Institutes for Research
   P.O. Box 1113
   Palo Alto, California 94302

3. AIR developed learning units prepared for the guidance program in project PLAN.

   Choices and Consequences

   Introduction to Decision Making

   Career Planning Practice I and II

   Interests and Values in Career Decision Making

*American Institutes for Research

3. (continued)

PLAN Student-Parent Goal Formulation

For more information, write to:

PLAN
Westinghouse Learning Corporation
2680 Hanover Street
Palo Alto, California 94305

4. You: Today and Tomorrow. For more information write to:

Educational Testing Service
Princeton, New Jersey 08540

5. Effective Problem-Solving Model. For more information, write to:

Dr. Thomas M. Magoon
Counseling Center
University of Maryland
College Park, Maryland 20742

6. Individually Prescribed Instruction. For more information, write to:

Dr. Robert G. Scanlon, Program Director
Individualized Learning Program
Research for Better Schools
Philadelphia, Pennsylvania 19100

7. Palo Alto Decision-training Program. For more information, write to

Dr. H. B. Gelatt
Coordinator of Guidance
Palo Alto Unified School District
Palo Alto, California 94305

8. AIR developed Goals and Behaviors Survey. For more information, write to

Guidance Research Program
American Institutes for Research
P.O. Box 1113
Palo Alto, California 94302

CHAPTER IX

COMPONENT NO. 6--WITHIN-SCHOOL PRESCRIBED LEARNING EXPERIENCES

As indicated in Table 1 on page 36, Component No. 6 is the first component of the Prescriptive Phase of the Comprehensive Career Guidance System. In the two components which constitute this CCGS phase, the emphasis changes from problem prevention to problem correction or remediation. Here the related instructional activities are not intended for all students but rather for target populations of youth experiencing specifiable problems for which assistance can be made available. Component No. 6 focuses on within-school prescribed learning experiences. The term "prescribed learning experience" (PLE) refers to a set of guidance and counseling related activities which a student and his teacher or counselor prescribe as an appropriate process which will enable the student to achieve a specific objective or group of objectives, and is reserved for activities which are specified to help students meet individualized objectives, rather than universal objectives toward which the development of all students is directed. The goal of this prescriptive component is for each student to have assistance which enables him to resolve specific within-school problems which are impeding his current progress and development in each of the six interfacing content areas of student needs.

Identifying Student Prescriptive Needs

An extensive review of follow-up studies was the first of several strategies used to identify student prescriptive needs. Those studies which employed open-ended, free response items or individualized interview techniques proved more useful in providing behaviorally specific information than did the short-answer format of most mailed or group administered surveys. Additional strategies included an investigation of current systems and programs of guidance, as well as a collection of information from counselors and teachers who were asked to identify specific problems which they felt individual students needed help in overcoming.

A fourth strategy involved the determination of the critical requirements for success in the important activities in which students engage in some of the six life areas. These were determined by conducting systematic observations of student activities, especially concentrating on reasons for outstanding success or failure in various specific parts of the activities. Trained observers were sent to classrooms to observe student behavior and to record those incidents which were considered critical to students' achieving effective or ineffective results for their personal and social development. Data obtained in this manner are more objective and specific and tend to define the precise ways in which individuals meet with effective or ineffective results when they participate in various activities. The needs which are thus identified can be stated in terms of discrepencies between students' present abilities and those competencies which they need to have in order to achieve more effective results if they are not doing so already.

Three examples of prescriptive needs which particular but not all students have and which were identified through use of the above procedures are the needs: to handle difficult or stressful situations; to understand information on colleges and universities; and to schedule, and implement a schedule of, a series of academic tasks. From the identified needs such as these, a list of instructional objectives and related student outcomes was developed. For the first need stated above, the related instructional objective and the student outcomes in the content area of personal and social development are:

OBJECTIVE: To deal effectively with difficult situations (e.g., when the student fails, is teased, or criticised)

Student Outcomes:

1. Reacts to threatening criticism or punishment in a calm constructive manner.

2. Handles teasing of others in a humorous, unruffled manner.

3. Performs a task which he had previously reported as stressful.

Other objectives and student outcomes in the content area of personal and social development are contained in Tables 12 and 13 on the following two pages. The student outcomes related to each of these objectives were found to be of two types: those relating to production or encouragement of desirable behaviors, and those relating to elimination or improvement of undesirable behaviors. These objectives and their related student outcomes formed the CCGS Personal and Social Development Program, the behavior assessment portion of which is appropriate to all students and, therefore, is included in Component No. 2 of the Development Phase, while the PLE aspect of its behavior modification portion is included here in Component No. 6. Table 12 is the Performance Record which contains the objectives and outcomes employed in the PSDP at the intermediate level, while Table 13, which is entitled the Complete Behavior List, lists those applicable to students at the secondary level.

For the second need above, the objective and the student outcomes classified in the educational area are:

OBJECTIVE: To know basic information on colleges, including cost, entrance requirements, academic programs and college life

Student Outcomes:

1. Define the following terms: *university, college, junior college, public college, private college, religiously affiliated, non-denominational, coeducational, liberal arts,* and *accredited.*

2. For each of these areas, list several specific kinds of information you would want to learn about before choosing a college:
   a. cost,
   b. entrance requirements,
   c. academic programs, and
   d. college life.

TABLE 12

INTERMEDIATE LEVEL OBJECTIVES AND STUDENT OUTCOMES OF THE PERSONAL AND SOCIAL DEVELOPMENT PROGRAM

BEHAVIORS TO BE ENCOURAGED

1. *TO DEAL EFFECTIVELY WITH DIFFICULT SITUATIONS*

   A. Handled threatening criticism or punishment in a calm and constructive manner.
   B. Complied readily with appropriate conditions of punishment.
   C. Handled teasing, attacks of others in a humorous or unruffled manner.
   D. Displayed good taste and manners in a difficult situation.
   E. Demonstrated ability to perform task which the student has previously reported as stressful.*
   F. Handled failure in a constructive manner.

2. *TO CARRY THROUGH ON ASSIGNED AND AGREED-UPON TASKS WITH RESPONSIBILITY AND EFFORT*

   A. Started assigned tasks promptly.
   B. Carried out assigned task without reminder or support from others.
   C. Completed learning tasks or play activities in spite of interference from other students.
   D. Did unusually thorough job on assigned task.
   E. Continued beyond requirements of assigned or agreed-upon task.
   F. Used AV media or books more than required by assigned or agreed-upon task.
   G. Planned and completed a strategy or a schedule involving several tasks.

3. *TO SHOW INDEPENDENCE, INITIATIVE, AND ORIGINALITY*

   A. Worked out satisfactory solution when faced by unfamiliar or unexpected situation.
   B. Developed appropriate solution for required activities previously reported as uninteresting but not stressful.
   C. Verbally demonstrated independent thinking in face of verbal opposition to his ideas.
   D. Asked teacher or fellow student questions in an attempt to relate current content to previously learned concepts.
   E. Sought additional work or asked to make up work that he could have easily avoided.
   F. Made up poem, song, or carried out original project.
   G. Volunteered on his own to try to learn a special skill which was not a required assignment.

4. *TO SHOW HONESTY AND INTEGRITY*

   A. Admitted own errors and made amends for them.
   B. Admitted learning mistake and worked to correct it.
   C. Admitted responsibility for behavior which violated rules (e.g., of conduct, work, or health habits).
   D. Verbally apologized to another person.
   E. Called attention to own errors, etc., that would have been to his advantage to ignore.
   F. Returned money or articles found.

5. *TO SHOW CONSIDERATION FOR THE FEELINGS OF OTHERS*

   A. Shared or took turns with someone.
   B. Helped to assure that others were not left out.
   C. Helped another person to participate in learning or play activity.
   D. Aided another person who was not feeling well or who was physically hurt.
   E. Helped handicapped student to participate in learning or play activities.
   F. Provided something for or gave up something to help another.
   G. Cheered up, complimented, or encouraged another person.
   H. Showed respect in making suggestions to another person.
   I. On his own initiative interceded for another person who was being criticized or taken advantage of by others.

6. *TO CONTRIBUTE TO GROUP INTERESTS AND GOALS*

   A. Provided something for special needs of group.
   B. Volunteered on his own information which contributed to completion of a group discussion or project.
   C. Volunteered on his own to help to organize group activities.
   D. Helped to clean up, arrange, or make special preparation for group activity.
   E. Notified others of special plans to complete an assignment and carried out these plans.
   F. Contributed to completion of group task by serving effectively as chairman of group.

7. *TO DEAL EFFECTIVELY WITH RULES, CONVENTIONS, AND TEACHER SUGGESTIONS*

   A. Obeyed rules or teacher suggestions when verbally encouraged by another person to disobey them.
   B. Protected public property when another was attempting to destroy it.
   C. Took special care of the personal property of others.
   D. Accepted responsibility and made immediate efforts to carry out teacher suggestions (e.g., to improve conduct, work, or health habits).
   E. Challenged rules or teacher suggestions by explaining his understanding and viewpoint of them.
   F. Encouraged another person to comply with rules or teacher suggestions in order to protect the rights and property of others.

BEHAVIORS TO BE IMPROVED

8. *TO DEAL EFFECTIVELY WITH DIFFICULT SITUATIONS*

   A. Reacted to teacher suggestions by crying, door slamming, calling teacher names.
   B. Reacted to suggestions, punishment, or teasing with running away from situation, hiding face, etc.
   C. Feigned sickness or gave excuse or destroyed work to avoid distasteful situation.
   D. Cried, complained, or was upset over small matter.
   E. Reported nervousness in new or unfamiliar situation.
   F. Due to stress, withdrew from group activity.
   G. Reported high nervousness in test situation.
   H. Test performance poorer than class performance.

9. *TO CARRY THROUGH ON ASSIGNED AND AGREED-UPON TASKS WITH RESPONSIBILITY AND EFFORT*

   A. Did not even start on assigned or agreed-upon task (e.g., learning activity or test).
   B. Dawdled or was late in starting task (e.g., tardiness).
   C. Had to be reminded by others to complete assigned or agreed-upon task.
   D. Performed task in superficial and incomplete manner.
   E. Did not organize and recall information from resources when required.
   F. Did not use book(s) or AV media when required by assigned or agreed-upon task.
   G. Did not follow directions for assigned or agreed-upon task.
   H. Did not complete task (e.g., learning activity or test) according to instructions.

10. *TO SHOW INDEPENDENCE, INITIATIVE, AND ORIGINALITY*

    A. Was unable to work out plan of action when faced by unexpected or unfamiliar situation.
    B. Reported lack of interest in or complained about activities and made no attempt to work out a solution.
    C. Yielded in face of verbal opposition to his ideas.
    D. Requested help from others on very simple task.
    E. Had to be told to undertake something that obviously needed doing.
    F. Was unable to show originality by developing even a very simple idea when presented to him.

11. *TO SHOW HONESTY AND INTEGRITY*

    A. Cheated in class or game.
    B. Changed grades, altered records, etc.
    C. Took property of others.
    D. Kept lost money or articles when found.
    E. Told a falsehood.
    F. Blamed others for own mistakes or misbehavior.
    G. Denied mistake or wrongdoing.
    H. Declined to accept responsibility for own learning mistakes.

12. *TO SHOW CONSIDERATION FOR THE FEELINGS OF OTHERS*

    A. Refused to take turns or share with others.
    B. Refused to allow another person to participate in play activities.
    C. Refused to help another person with learning or play activities.
    D. Refused to aid another person who was not feeling well or who was physically hurt.
    E. Struck, pushed, spit on, threw things at, or interfered with another person.
    F. Tattled on another person.
    G. Played tricks on another person.
    H. Called another person a name.
    I. Laughed at the mistakes of another person.
    J. Used sarcasm and disparaging remarks in making criticisms and suggestions to or about another person.
    K. Poked fun at another person.
    L. Referred to another's race, religion, appearance, handicap, or nationality in a disparaging manner.

13. *TO CONTRIBUTE TO GROUP INTERESTS AND GOALS*

    A. Did not participate but did attend a group activity.
    B. Complained about or refused to participate in group activity.
    C. Complained about or refused to help clean up, arrange, or make special preparations for group activity.
    D. Attempted to avoid doing his share of group's work.
    E. Did not contribute to completion of group task while serving as chairman of group.
    F. Disrupted and annoyed the group.
    G. Verbally interrupted or answered for others during group activity.
    H. Failed to notify others of plans.

14. *TO DEAL EFFECTIVELY WITH RULES, CONVENTIONS, AND TEACHER SUGGESTIONS*

    A. Did not comply with rules or teacher suggestions (e.g., for conduct, work, or health habits).
    B. Complained about rules or teacher suggestions (e.g., for conduct, work, or health habits).
    C. Verbally encouraged another person to disobey or to complain about rules and teacher suggestions.
    D. Lost, wasted, or failed to care for supplies, money, etc.
    E. Destroyed or mutilated personal or public property.

TABLE 13

SECONDARY LEVEL OBJECTIVES AND STUDENT OUTCOMES OF THE PERSONAL AND SOCIAL DEVELOPMENT PROGRAM

COMPLETE BEHAVIOR LIST

1 *TO DEAL EFFECTIVELY WITH DIFFICULT SITUATIONS*

BEHAVIORS TO BE ENCOURAGED, MAINTAINED, OR PRODUCED:

1. Handled failure in a constructive manner.
2. Handled threatening criticism or punishment in a calm, constructive manner.
3. Displayed concern for the needs of others in a difficult situation.

BEHAVIORS TO BE IMPROVED:

4. Reacted to suggestions, criticism, or punishment by being rude or sarcastic.
5. Acted nervous, silly, or made wisecracks in a difficult situation.
6. Acted annoyed or angry with actions of others.

2 *TO SHOW STRENGTH OF CHARACTER AND INTEGRITY*

BEHAVIORS TO BE ENCOURAGED, MAINTAINED, OR PRODUCED:

1. Admitted or apologized for own mistakes.
2. Pointed out facts when they were not in his favor.
3. Pointed out facts when they were in his favor.
4. Offered to make amends for own mistakes.

BEHAVIORS TO BE IMPROVED:

5. Blamed others for own mistakes or misbehavior.
6. Denied own mistakes.
7. Declined to accept responsibility for own mistakes.

3 *TO CONTRIBUTE TO GROUP INTERESTS AND GOALS*

BEHAVIORS TO BE ENCOURAGED, MAINTAINED, OR PRODUCED:

1. Discussed or made specific suggestions as to what to do about the group problem.
2. Helped to organize group activities (e.g., by keeping notes or record).
3. Volunteered to do work involved in completing group task.
4. Put group goals ahead of individual goals.

BEHAVIORS TO BE IMPROVED:

5. Did not participate but did attend a group activity.
6. Complained about or made fun of group's activities
7. Disrupted or annoyed group.

4 *TO SHOW CONSIDERATION FOR THE FEELINGS OF OTHERS*

BEHAVIORS TO BE ENCOURAGED, MAINTAINED, OR PRODUCED:

1. Helped to assure that others were not left out.
2. Helped another person.
3. Sympathized with or encouraged others.
4. Stuck up for others.
5. Showed respect in making suggestions or criticisms or when interacting with another person.
6. Showed politeness by introducing himself, greeting, and thanking others.

BEHAVIORS TO BE IMPROVED:

7. Made derogatory personal remark to or about another person (e.g., called him a name.
8. Ridiculed or poked fun at another's suggestion.
9. Made suggestions in a sarcastic or rude manner.
10. Made statements to indicate was not concerned when others are going to be left out.
11. Refused to help others.
12. Interrupted another person, or did not give others a fair chance to speak.

5 *TO FUNCTION EFFECTIVELY IN A LEADERSHIP POSITION*

BEHAVIORS TO BE ENCOURAGED, MAINTAINED, OR PRODUCED:

1. Took initiative to organize the group. For example: Began group discussion, suggested a chairman or volunteered himself, reminded group of purpose and time limit of meeting, or asked for or made a summary of the meeting.
2. Asked or tried to get others to participate or give information.
3. Made suggestions or criticisms to guide group activity.
4. Gathered facts and presented them before taking action.
5. Carried out decisions once made.

BEHAVIORS TO BE IMPROVED:

6. Failed to carry out decisions once made.
7. Made decisions or took action before gathering and sharing the facts.
8. Did not contribute to completion of group task while serving as leader or chairman of the group.

3. Describe the kinds of information you would expect to find from the following sources of information: resource people, college handbooks, college catalogues, and a visit to a college campus.

4. List four main sources of funds which students use to meet the cost of a college education.

5. Write a one- or two-page report on three colleges, including information on the cost, entrance requirements, academic program, and college life, and on the advantages and disadvantages of each college for you.

Additional objectives and outcomes related to educational and vocational needs which are not felt by all students include:

OBJECTIVE: To demonstrate skills which are important in applying for a job and in being accepted for training after high school.

Student Outcomes:

1. Arrange a personal interview by phone.

2. Prepare a personal resumé.

3. Use appropriate behavior and show appropriate appearance in a personal interview.

4. Fill out application forms correctly.

OBJECTIVE: To contrast the kinds of opportunities that are available to a high school graduate to the opportunities that are available to someone who has not completed high school.

Student Outcomes:

1. Describe the educational opportunities and places where training may be obtained and which are available to high school graduates and dropouts.

2. List the educational opportunities in your area that are available to high school graduates.

3. List the educational opportunities in your area that are available to a high school dropout.

The following are the objectives and the student outcomes which relate to the third need specified earlier and are in the area of academic-learning activities:

OBJECTIVE: To acquire and practice study planning skills

Student Outcomes:

1. Identify current rate and quality of assignments.

2. Identify what is expected in each curriculum subject area.

3. Set tentative goals for each subject, i.e., current progress is okay, need to speed up, need to be more careful, need to speed up and be more careful.

4. Consider alternative plans for reaching these goals and consequences of each alternative.

5. Put best alternative into action.

OBJECTIVE: To acquire and practice study scheduling skills.

Student Outcomes:

1. Explain the importance of developing good learning skills.

2. List steps that will help raise a grade point average.

3. List steps for increasing your study time.

4. List steps for studying more efficiently.

5. Rate your study and learning techniques.

6. Complete a study schedule on subjects from the most difficult to the least difficult.

OBJECTIVE: To determine the rate of your current progress in academic subjects.

Student Outcomes:

1. Understand and interpret uses for progress charts and graphs.

2. Compute weekly progress rate.

3. Compute unit progress rate.

OBJECTIVE: To learn the PQRST technique for improving your learning.

Student Outcomes:

1. Discriminate between effective and ineffective, efficient and inefficient learning plans.

2. Identify the behaviors involved in each step of a given learning plan (PQRST technique) and state why the plan might be both effective and efficient.

3. Record learning activities for two weeks and compare them to the number of opportunities to perform these activities.

4. Decide if your current learning plan needs improvement and if the PQRST technique could help you. If so, implement the desired parts of the PQRST learning plan.

OBJECTIVE: To improve your test taking skills.

Student Outcomes:

1. Identify and apply four rules for effective test taking.

2. Apply knowledge of the four rules of effective test taking by identifying a variety of given test taking behaviors as usually "effective" or usually "ineffective."

The process of translating prescriptive needs statements into objectives and student outcomes resulted in a bank of instructional objectives similar to those presented above. This bank contains objectives in those of the six life areas which received attention during this project (i.e., the areas of citizenship and leisure behaviors were neglected). These objectives are available for the selection or design of approaches for attempting the remediation of specific problems which individual students experience.

Classifying Objectives by Commonalities and Assigning Priorities

When the instructional objectives were translated from the prescriptive needs, clusters resulted in those of the six life areas to which staff were able to devote time and effort during this project. Major emphasis was placed on clusters of objectives which related to interpersonal and intrapersonal concerns, academic-learning difficulties, and individualized needs in the area of educational-vocational exploration and planning. The objectives which represented the interpersonal-intrapersonal cluster are the same ones around which this area of needs was organized in components in CCGS's Developmental Phase (cf. Chapter V on personal assessment of personal and social behaviors). As mentioned earlier, the eight objectives which form the interpersonal-intrapersonal cluster are:

1. To deal effectively with difficult situations.

2. To carry through on assigned and agreed-upon tasks with responsibility and effort.

3. To show independence, initiative, and originality when faced with unexpected situations or special needs.

4. To show strength of character and integrity.

5. To show consideration for the feelings of others.

6. To contribute to group interests and goals.

7. To deal effectively with rules, conventions, and teacher suggestions.

8. To function effectively in a leadership position when in a small group or with another student.

The second cluster which was identified and emphasized relates to specific needs of individual students who have particular concerns in their educational-vocational exploration and planning. Many needs in the educational-vocational area are of a developmental nature, therefore, materials designed to satisfy these needs are thought to be beneficial for all students and are thus contained in the developmental components of CCGS presented earlier. However, there are also needs in this area which are not felt by all students and attention must be given to these needs and their related objectives on an individual prescriptive basis. The third and final grouping of objectives by commonalities which received attention during this project occurred in the academic-learning area, which deals with how students learn in school and elsewhere. Of particular importance here were objectives relating to student test-taking and studying behavior.

Specifying Alternative Strategies for Meeting Student Prescriptive Needs

The tailoring of instructional strategies to the needs and characteristics of individual students is of prime importance for prescribed learning experiences because here students with specific problems are the target population members, and the appropriate strategy must be precisely matched with the needs and characteristics of each student in order to alleviate most effectively the difficulties which he or she is having. Individual and group counseling sessions, self-instructional booklets, student tutorials, group guidance, informal discussion groups, and libraries of audiotapes and videotapes presenting social models for students are examples of strategies which were considered for use in prescribed learning experiences, especially in the area of personal and social development in which interpersonal and intrapersonal behaviors are emphasized.

To provide assistance in the area of students' academic and learning problems, group counseling strategies have often been investigated since they have been thought to be especially useful because of the reinforcing effects of group interaction. Here students meet in groups to discuss their learning problems and discover ways of remediating them. Therefore, group approaches received special attention in this area of needs and objectives. Two somewhat unique computer-supported strategies were considered for implementation in the educational-vocational areas. The Interactive Learning System (ILS) approach, which enables students to have on-line access to the computer, as was briefly described on page 87 in Chapter VI, is one such strategy. Another is Santa Clara County Office of Education's computerized listing of county-wide occupational opportunities (cf. page 88). For the more prescriptive use in Component No. 6, these strategies would be implemented in a more individualized, personalized manner providing answers to the specific information needs of students. In Component No. 3, described in Chapter VI, these strategies were reviewed in the context of universal or developmental objectives. In the present component, these two approaches could be employed by students seeking information on specific occupations, colleges, vocational-technical schools, or financial assistance.

Selecting, Assigning, Scheduling, and Implementing Strategies

The self-instructional booklet, which contains a series of instructional-counseling activities and which is designed in a format consistent with guidance learning units described for each preceding CCGS component, was the strategy selected for use in the prescriptive portion of the Personal and Social Development Program. Since the development of this portion of the PSDP received much attention during this project, the results will be described in detail. Two types of self-instructional booklets were developed for intermediate level students. For each area of objectives, one booklet was designed to help students learn to perform, or to perform more often, outcome behaviors they desired. These were booklets for Behaviors to be Encouraged. The second type of booklet for each area of objectives at the intermediate level was designed to assist students to reduce or eliminate undesirable outcome behaviors. These booklets were labelled as being appropriate to Behaviors to be Improved.

At the secondary level three types of self-instructional booklets were developed. For each area of instructional objectives contained in this portion of the PSDP, there was a booklet for Behaviors to be Improved which corresponded directly to the same category of booklet at the intermediate level. The second type of booklet (i.e., booklets for Behaviors to be Produced) for each area at the secondary level was established to enable students to learn and perform the desirable outcome behaviors which were not currently in their response repertoires. Finally, the third type of booklet (i.e., booklets for Behaviors to be Maintained or Encouraged) was set up to assist secondary level students to continue to perform at the same rate those desirable behaviors which were in their response repertoires or to perform these behaviors more often.

All of the PLE booklets in the PSDP present students with a variety of behavior modification techniques which they can use to achieve the behavior change objectives on which they are working. Those techniques which are suggested in the intermediate level booklets for Behaviors to be Encouraged, and in the secondary level booklets for Behaviors to be Produced and for Behaviors to be Maintained or Encouraged are:

1. production of a desired response through self-control once its positive consequences have been pointed out;

2. role modeling of a desired response;

3. modification of stimulus conditions that occur just <u>before</u> and/or just <u>after</u> a desired response occurs;

4. positive reinforcement of a desired response; and

5. successive approximations of a desired response.

Behavior modification techniques presented in the booklets for Behaviors to be Improved at both levels are:

1. extinction of an undesired response through self-control;

2. role modeling of a desired response, which would be used to replace an undesired behavior;

3. modification of stimulus conditions that occur just before and/or just after an undesired response occurs;

4. production of a desirable behavior that cannot be performed at the same time as an undesirable behavior is performed; and

5. successive approximations to the reduction or elimination of an undesired response.

The format of these booklets is consistent with the guidance learning unit concept presented throughout this report. The student experiences are guided by instructional objectives which focus on activities such as those described below and which take students three or four weeks to complete. The specific activities presented as examples in the two following sections are contained in intermediate level PLE booklets for Behaviors to be Encouraged and for Behaviors to be Improved; they parallel those activities contained in the secondary level booklets for Behaviors to be Produced and for Behaviors to be Maintained or Encouraged.

Example Activities in Two Types of Behavior Modification Booklets

Activities in PLE booklets for Behaviors to be Encouraged (intermediate level) include the following:

1. The student discriminates between Behaviors to be Encouraged and Behaviors to be Improved, assesses his behavior over recent weeks, and checks his assessment data against that which his teached or counselor observed. Such behaviors to be encouraged are then specified in detail.

2. The student examines the alternatives that are open to him, considers the results of doing the Behaviors to be Encouraged even more often, decides whether he wants to work further on the booklet and, if so, chooses a behavior to work on and decides what to do with it.

3. The student learns how to pick out conditions (things in his environment) which happen just before and/or just after the behaviors he identified in Step No. 1. He then decides if making these conditions happen more often would help him work on the behavior he chose in Step No. 2 above.

4. The student learns at least four different plans or ways to work on doing even better. He uses example plans to develop a best and an alternate (backup) plan for his own behavior change.

5. The student reviews both an example plan which has the details filled in so that he can use it as a model and a blank plan in which he can record the details of his own best plan.

6. The student and anyone he has scheduled in his plan to help him monitor his performance keep track of his progress for at least three weeks. If his plan is not working, it might have to be changed or some form of the alternate plan might have to be tried.

7. The teacher/counselor and the student decide if the student has changed his behavior (he is doing even better than he did before working on the booklet), and what, if any, behavior change he will plan for next.

Activities in PLE booklets for Behaviors to be Improved (intermediate level) include these:

1. The student learns why he has received this booklet, assesses his behavior over recent weeks and checks his assessment data against that which his teacher or counselor observed. He and his teacher or counselor then decide whether or not there is a behavior which he could reduce or eliminate, i.e., "improve." Such behaviors to be improved are then specified in detail.

2. The student learns how to pick out conditions (things in his environment) which happen just before and/or just after the behavior(s) he and his teacher or counselor have agreed could be improved. He then attempts to pick out such conditions for the behavior(s) identified in Step No. 1 above.

3. The student learns how to consider the results of his actions and then indicates possible results of the behavior(s) which he agreed in Step No. 1 could be improved. He then has to decide whether or not he wants to change the behavior(s).

4. If the student decides to try to improve his behavior(s), he learns at least four different plans or ways to reduce or eliminate undesirable behaviors. He then can use these example plans to develop a best and an alternate (backup) plan for his own behavior change.

5. The student reviews both an example plan which has the details filled in so that he can use it as a model and a blank plan on which he can record the details of his own best plan.

6. The student and anyone he has scheduled in his plan to help him monitor his performance keep track of his progress for at least three weeks. If his plan is not working, it might have to be changed or some form of the alternate plan might have to be tried.

7. The student and his teacher or counselor decide if he has changed his behavior and what, if any, behavior change he will plan for next.

The different plans or ways to change behavior which are the behavior modification techniques described earlier are presented in language appropriate to the academic level for which the booklet is written and accompanied by examples of hypothetical students employing the techniques. For example, plans described in the secondary level PLEs are similar in concept to those at the intermediate level and involve the following details:

PLAN 1. This plan which emphasizes cognitive control of behavior, encourages the student simply to start performing the desired response. That is, once he recognizes that he wants to perform a new behavior and is aware that there is a behavior he wants to change, he attempts to change it by beginning to perform the new behavior.

PLAN 2. The student learns to look for relevant elements in his environment that might be eliciting his behavior, but not for "deep causes" of his behavior. He searches not for isolated stimulus conditions, but for consistent conditions which usually come just before his behavior and appear to influence his performance. If he identifies such conditions, he then learns about ways that he can modify his behavior by causing those conditions to occur more often (if he is encouraging or producing behavior) or to be eliminated (if he is reducing behavior).

PLAN 3. This plan parallels PLAN 2, with the exception that the emphasis is on conditions which occur after rather than before the behavior. "After" conditions are those which might help to maintain behavior by acting as rewards or reinforcers. If the student is able to identify conditions which consistently follow a target behavior, he has a useful tool to help him modify his behavior. For example, if he is encouraging or producing a behavior, he learns that he probably will have a greater chance of success by having the rewarding condition happen more often after he emits that behavior. On the other hand, if he is trying to reduce a behavior, he learns about how he can try to eliminate the after condition which seems to be encouraging his inappropriate behavior.

PLAN 4. Social modeling, which is the key to this plan for modifying behavior, necessitates that the student observe others who are able to behave the way he wants to behave. If he is trying to encourage or produce behavior, he observes others who are able to behave in a way which is similar to that which he desires. However, if he is trying to reduce inappropriate behavior, he observes others to see what they do in order to extinguish such a behavior. In this context, "observation" means seeing, talking to, and reading about others.

PLAN 5. This plan involves having the student approach his goal in a step-by-step manner. Instead of changing his behavior in a single step, he must decide what are the logical steps toward reaching his goal and then work through those steps one at a time.

PLAN 6. This plan, which is included only in the booklets for Behaviors to be Improved, encourages the student to find and perform a behavior called an "incompatible response," i.e., one which cannot be performed at the same time and place as the undesired response. If he selected this plan, he performs the more acceptable response every time he has an opportunity to perform the inappropriate behavior and this is intended to help him extinguish the undesirable pattern.

Students working on PLE booklets in the PSDP are encouraged to consult frequently with their teacher or counselor. Each student in combination with

his teacher or counselor is responsible for selecting the behavior modification techniques which are believed to have most potential for effectively helping that student encourage, produce, or improve behavior in order to meet his personal and social development needs. Thus when students experience difficulty and are unable to develop a plan or method for changing their behavior, they are urged to meet with the counselor or teacher. School personnel also may assist the student to monitor how well he is able to carry out the plan once he has selected it. If his progress is too slow, or unsuccessful, the student is encouraged either to modify his plan or switch to an alternate plan for changing his behavior. At the secondary school level, the Guide for the Personal and Social Development Program has been developed for school personnel assisting students to overcome such difficulties, while at the intermediate level the General Guide provides information on the conceptualization and operation of the PSDP in addition to describing the technique for collecting the assessment data on which student participation in the program is based. The three-part Teacher Supplement for intermediate level school personnel outlines the techniques used in the particular PLE booklets and describes the assistance students might need and what types of questions they might ask. Part One of this supplement covers directions relative to student orientation activities, Part Two covers directions for PLE booklets on Behaviors to be Encouraged, and Part Three deals with booklets on Behaviors to be Improved. At the secondary level, the single Guide for the Personal and Social Development Program includes the same material covered by the two intermediate level documents.

PLE booklets in the Personal and Social Development Program are applicable only for the students who have certain identifiable needs. These needs are identified by means of two personal assessment strategies that employ the critical incident technique (Flanagan, 1964). At the intermediate level, teachers make use of the Performance Record, and at the secondary level, they employ the High School Social Situations Test (HSSST). Both these techniques were described in detail in Chapter V on pages 73 and 75. It is in using these two assessment techniques that the computer plays a vital role. The HSSST is designed to be scored by a computer and each student receives a computer printout indicating the behaviors he performed during the role-play situations. At the intermediate level, as the behavioral incidents are gathered by the teacher or counselor, they are submitted to the computer which performs a "bookkeeping" role and sends a message (in the form of a recommendation) back to the teacher when the information submitted on a student indicates that he might benefit from a PLE. For Behaviors to be Improved at the intermediate level, a "trend" in the student's behavior, rather than a chance fluctuation, must be indicated before a PLE will be recommended for the student. For the purpose of this program, this type of "trend" involves three or more incidents of the same behavior within one of the seven objective areas of personal or social development, or when any other combination of incidents of different behaviors within one of the areas totals three or more. For Behaviors to be Encouraged, only one desirable behavior in an objective area need be performed before the computer sends a recommendation to the teacher and student. The recommendation which is given at this point is for the student to receive a Success-o-Gram (S-O-G), an attractively designed sheet of paper which congratulates the student for his desirable behavior and tells him he may engage in a favorite activity such as drawing, painting, reading for pleasure, making

a model, etc. For each objective area a student may receive one S-O-G per semester. After engaging in the favorite activity, the student is told that a booklet to help him do even better is available if he would like to use it. Once a student has performed one behavior in an area of Behaviors to be Encouraged, he can, at any time, choose to work on a booklet for that area. Thus, only one incident of a Behavior to be Encouraged in any one area need be observed for a student before he can ask to receive the booklet for that area.

In the PSDP at the secondary level, PLE behavior modification booklets are selected by the students themselves. Three types of PLE booklets are available for each area of personal and social objectives covered at this level: PLEs for Behaviors to be Produced, for Behaviors to be Maintained or Encouraged, and for Behaviors to be Improved. Students make this decision on the basis of information they receive from the HSSST which attempts to help them consider the current status of some of their personal and social behaviors. If the results of the HSSST role-play situations are drastically different from how the student thinks he acts, he is asked to check them out against other information he can gather about himself before making a decision.

Self-instructional booklets have also been the major way of organizing and presenting experiences selected for PLEs in the educational-vocational and the academic-learning areas. In the educational-vocational area, particular emphasis has been placed on involving students in actual exploratory activities in addition to using written information sources. For example, the PLE on information about colleges would be used by those students who are seriously considering college as a post-high school alternative and encourages them to engage in talks with their parents about various variables affecting college attendance such as costs and scholarships, as well as suggests they visit prospective campuses. Another educational-vocational PLE designed to assist students who have a need to apply for part-time jobs focuses on completion of actual application procedures rather than on learning about such application activities. Instructional experiences in this PLE include obtaining a Social Security card, filling out an application, taking any tests which may be required by the prospective employer, and having an interview.

PLEs designed to help students with learning difficulties such as studying, test-taking, and listening focus on skill (knowledge) and behavior (performance) acquisition. At both the intermediate and secondary levels, self-instructional booklets are used to acquaint students with basic approaches for effective learning in these three areas and to help students make use of these approaches in order to develop actual learning habits which they will be able to perform when appropriate. In addition to these self-instructional booklets, groups of PLEs have been implemented through the use of several group counseling techniques. Two example approaches are briefly presented here in order to illustrate these group methods, some of which are quite structured, as are the two described below, while others are more openended, such as are the group techniques in which members are encouraged to express their attitudes toward studying and their study difficulties. In this type of group, a counselor acts as a discussion catalyst and avoids the role of being an expert in study activities.

One of the more structured approaches is based on operant conditioning principles. Each week the group members are encouraged to progress to a closer approximation of the level of response performance contained in a written

model describing specific studying behaviors. During each session the group focuses on one approach to effective studying and the current behavior and an area of possible improvement for each group member is determined. At the end of the session, each subject is asked to select one study behavior which he is not currently performing but will practice during the subsequent week. Each person makes a written reminder of the selected response while the counselor keeps a record of all responses selected. Positive reinforcement used in these group sessions is, at first, confined to verbal and nonverbal encouragement from the counselor. As the counseling sessions progress, reinforcement also comes from the members of the group and includes such remarks as "good," "very good," "fine," "good idea," or such nonverbal approval as nods and smiles. Since responses which conflict with effective studying approaches are ignored rather than punished, students seem to recognize, without instruction, that an inappropriate response is neither to be criticized nor reinforced.

Another group counseling technique is directed toward desensitizing anxiety students experience relative to examinations. During initial sessions, students are given an explanation of the concepts and procedures involved in relaxation training and desensitization, after which they practice muscular relaxation in which they are given opportunity to select five or six exercises that they feel are most relaxing for them. These exercises are repeated at the beginning of each session thereafter. In addition students complete an anxiety questionnaire in order to develop a standardized hierarchy of anxiety-eliciting imaginary scenes which can be used for the whole group. During the process of desensitization, Wolpe's (1961) suggestions for the presentation of scenes are followed. After an innocuous scene is presented and visualized by each group member, students are asked to let the scene fade and to concentrate on their feelings of relaxation. The first hierarchy item is then read aloud by the counselor. The subjects are encouraged to retain the scene for 10 seconds unless someone experiencing anxiety indicates it by raising his left index finger. The 10 seconds usually allow sufficient time for each student in the group to imagine the scene clearly. If anxiety feelings are signaled, the scene is terminated immediately by the counselor's asking the group to stop visualizing and to relax. Suggestions are then given for 20 seconds of relaxation. If the first visualization arouses anxiety, the counselor does not progress to the second step, but returns to the first step involving visualization of scene one for 10 seconds. If all the subjects are able to complete the first step without signaling, the imagery followed by relaxation is repeated with the second presentation of the first hierarchy item for 25 seconds. The third presentation of the first scene is held by the group for 35 seconds. Once everyone is able to imagine the first hierarchy item for 35 seconds without experiencing tension, the counselor goes on to the next item up the anxiety hierarchy. This same series of activities is repeated for each scene on the hierarchy and the assumption is made that once all group members have "mastered" each item, they will be able to handle similar real-life experiences with less debilitating anxiety than they felt before they started the group relaxation and desensitization sessions.

For all programs contained in the two prescriptive components of the CCGS, there is no implementation schedule which can be described. Since programs contained in the developmental phase of guidance are intended for all students, they are scheduled for introduction and implementation at

various points during the school year. However, within-school PLEs described in this chapter are only intended for students with particular needs, and are introduced only when those needs arise.

Evaluating Strategies and Providing Feedback and Correction

In this CCGS component, evaluation involves both determining how effective the PLEs are in helping students achieve the outcome behaviors for which they are designed, and providing feedback for correction and improvement of the PLEs themselves. In the first type of evaluation, a distinction must be made between skills and actual behaviors. This is the distinction that Mischel (1968) has made between response learning or acquisition (i.e., what an individual can do) and response performance (i.e., what an individual does do). The evaluation strategies described in this chapter focus very heavily on performance of actual responses. However, the evaluation of skill or knowledge acquisition is stressed whenever desirable as is true of attitudinal statements. Since the major part of this project's attention in the area of Component No. 6 was devoted to development and evaluation of the PSDP, the results of the evaluation activities on this program receive major emphasis in this section.

Because the PSDP is aimed at helping students make behavior modifications, overt performance outcomes are the most appropriate criteria by which to evaluate the effectiveness of the program. Teacher and counselor records of student overt performance were used as one of the main evaluation techniques in PSDP evaluation studies. Each teacher or counselor was provided with a list of this program's student behavioral outcomes which are contained in the Performance Record for the intermediate level (Table 12) and the Complete Behavior List (Table 13) for the secondary level. The manner in which these lists were used by school personnel is the same as that described for the Performance Record in Chapter V on page 73. On slips of paper which included spaces (for student names, descriptions of behaviors, and dates), critical incidents of student behavior were recorded after they were noticed during the course of the school day. Later these behaviors were classified into one of the categories for Behaviors to be Improved or Behaviors to be Encouraged, Maintained, or Produced.

The approach described in the preceding paragraph involves a method for behavioral observations in which opinions, generalizations, and reactions are reduced to a minimum by having counseling personnel record the incidence of specific overt behaviors described in the behavior lists. These personnel were told neither that they should set aside a definite time each day to record the critical incidents of student behavior, nor that they should observe a student with the hope that he will do something which could be recorded as a critical incident. Instead, counseling personnel were requested to record the critical incidents of student behavior occurring spontaneously each school day. They did not have to spend a great deal of time observing; minute-by-minute observation was not necessary. Only when noteworthy behaviors were performed did these staff members need to take notice for the purpose of recording critical incidents; they recognized that such behaviors probably would attract their attention.

A second evaluation strategy which was used in investigations of the PSDP's impact involved students' assessments of their own behaviors. Students were given the lists of behaviors which paralleled those the teachers or counselors received and were asked both to recall their behaviors over a specified time period--usually not longer than one week--and to record key responses they remembered making. A third evaluation strategy using the same behavior lists involved students' assessment of their peers' behaviors.

These three strategies were used on a pretreatment-posttreatment basis--i.e., before and after the administration of a PLE booklet. If desirable behaviors were reported before a student received an appropriate PLE booklet and he performed those behaviors at an increased rate after working through this booklet, it was concluded that the PLE booklet had achieved its purpose. If undesirable behaviors were initially reported for a student, the assigned booklet was considered effective if after its administration the student no longer emitted, or emitted at a reduced rate, the undesirable behaviors.

Evaluation strategies attempting to tap the variables of youth attitude and knowledge related to personal and social development also were employed in assessing PSDP processes and effects. A series of five- to seven-minute audio tapes was designed so that each tape depicted a student having difficulty in one of the PSDP areas and in situations in which students could possibly find themselves. For example, one tape dealt with a student who was having difficulty in showing consideration for the feelings of others. Within the tape, the student changed his behavior and ended up performing one of the desirable student behaviors in that same interpersonal area. Following each tape, students answered several written questions designed to test their knowledge of the PSDP area for which the tape was developed--that is, these questions attempted to ascertain if students knew with what social skill area the tape primarily dealt, if they could identify the behavior with which the student in the tape was having difficulty, and if they could specify the desirable behavior which the student performed at the conclusion of the tape. A second series of questions following each tape sampled students' attitudes toward performing desirable bahaviors in the PSDP area presented in the tape. Students were asked to indicate whether they strongly agreed, slightly agreed, slightly disagreed, or strongly disagreed with statements such as: "It is important for me to encourage or sympathize with others," or "Helping other people is usually a waste of my time." Like the records of actual student behaviors, these tapes were used on a pretest-posttest basis in order to provide additional evidence of the degree and nature of PLE effects.

The preceding strategies were used in evaluation of the PLEs in the area of personal and social development. Under the remaining topics of this chapter, the employment of these strategies in four quasi-experimental studies of different aspects of the PSDP will be reviewed. However, before this review is begun, discussion will first focus on a brief summary of evaluation procedures and techniques which are applicable to the other two PLE areas which received attention during this project. For the evaluation of PLEs in the area of academic-learning behaviors a number of different strategies have been developed. For PLEs designed to improve academic performance, a Time Evaluation Form was used in order for students to identify the types of daily activities in which they participated and the amount of time directed to these activities. This instrument attempts to get students to compare the amount of time they spend studying with the amount of time they devote to other activities. For more specific evaluation purposes, the Study Effectiveness

Form was designed so that students would have to make daily records of their exact study activities, the time spent on each activity, and their assessment of the effectiveness of each activity.

Additional strategies for evaluating the outcomes of instructional-counseling activities aimed at academic-learning behaviors are available. For example, there are many surveys of study habits which represent a somewhat less direct way of evaluating students' study performance, but they can be used to supplement data collected by the more direct approaches. One example of such a survey is the Study Habit Inventory developed by Ryan (1966, 1967). In this instrument, students are asked to indicate on a four-point scale the frequency with which they currently perform 100 study behaviors. Similarly, the Survey of Study Habits and Attitudes developed by Brown and Holtzman (1966) presents 75 statements on which students use a five-point scale to identify whether they rarely, sometimes, frequently, generally, or almost always do or feel as each of the 75 statements suggest. When reduction of test anxiety is the goal of a student, the effectiveness of treatment strategies designed to achieve this goal can be evaluated by a variety of published instruments. One example device, the Test Anxiety Scale (Emery, 1966), requests students to record whether or not each of 68 test-related situations makes them feel anxious.

In order to evaluate student attitudes toward various academic-learning activities and concepts, two strategies have been developed and employed. The Academic Attitude Inventory and a semantic differential. The first instrument includes 30 attitudinal statements counterbalanced as to direction so that to agree with some items indicates a positive attitude while that same response to other items portrays a negative attitude. The semantic differential technique is designed to assess the subjective meaning respondents attach to concepts relevant to education in general and academic behavior in particular. This technique utilizes a series of seven-point adjective scales such as hot-cold and small-large, along which a person rates various concepts, including academically related ones such as "teachers," "classes," and "myself as a student."

Where the focus has been on student performance of various activities, as it has been in the educational-vocational area PLEs, evaluation emphasis has related predominately to determination of whether or not those activities have been performed rather than to assessment of the knowledge students gained in the PLEs or the type and amount of attitude change they experienced. Observational checklists used by fellow students or counseling personnel and student reports of evidence of completion of the instructional objectives involving exploratory activities have been employed. Knowledge outcomes, however, have also been assessed. This is achieved primarily through the use fo multiple-choice pencil-and-paper tests which contain several items keyed to each objective being tested.

Quasi-Experimental Studies of PSDP Effects

Four quasi-experimental investigations were conducted in order to field test both the effectiveness of the PSDP and the facility with which the pro-

gram could be implemented. The major precedural aspects of the program have been discussed earlier in this chapter and in Chapters IV, V, and VIII. The studies reported here combined the orientation, assessment, and goal formulation aspects of the developmental phase of the program with its behavior modification portion, emphasized in this chapter.

Study A--The Effect of PSDP Orientation at the Intermediate Level. This study emphaiszed student instructional-counseling experiences described in Chapter IV, but since the study is closely associated with the entire PSDP the results are being presented here. The study was conducted with 261 fifth- and sixth-grade students from nine classes in five San Francisco Bay Area schools. Teachers volunteered their classes for participation. Criterion data were collected by: (a) teacher observations, (b) self observations, and (c) peer observations. No inactive or alternate treatment control groups were involved because it was desired that all students receive the PSDP orientation so that they all would be available later for participation in the PLE phase of the program.

Prior to the administration of the orientation materials, which were described in detail in Chapter IV, the above three types of student data were collected to obtain a baseline record of each subject's performance level on behaviors included in the intermediate level portion of the PSDP. Teachers observed the behavior of students in their classes over a two-week period, recording their observations on two succeeding Fridays. On the same two Fridays, students were given a PSDP behavior list which directly paralleled the list used by teachers, but which was worded in more appropriate student language. Students were also given the names of students in their classroom on a list which had opposite each name a space for recording code number and letters of PSDP behaviors. Opposite their own names students gave self reports on behaviors which had occurred both in and out of school during the preceding week. Opposite their peers' names they recorded behaviors they observed in their peers during the same time period. Students were told not to hunt meticulously for incidents of behavior for each peer in the class, but rather to record only those behaviors which they had noticed spontaneously during the week. If a single behavior happened more than once, students were told to record the number and the letter of the behavior once for each time it occurred. If they had noticed none of the behaviors on the list for some students, they were told to leave blank the spaces opposite those names.

Following this phase of data collection, two weeks were allotted for student work on orientation activities, after which the same data collection procedures were repeated. The hypotheses to be tested were: (1) that the number of behaviors to be encouraged which were reported on the second observation would increase from those reported on the first observation, and (2) the number of behaviors to be improved would decrease from the first to second observations. The mean number of pre- and posttreatment behaviors recorded by teachers, peers, and students on themselves for each of the areas of behavior covered at the intermediate level was calculated. These results are presented in Tables 14, 15, and 16 on the next page.

Although F ratios were calculated, they are not reported here because they appear to have little practical significance in light of the fact that the standard deviations were from two to four times greater than the means. In virtually every instance, the number of behaviors reported in the post

TABLE 14

SELF PRE AND POST ORIENTATION OBSERVATIONS FOR BEHAVIORS TO BE ENCOURAGED AND BEHAVIORS TO BE IMPROVED IN THE INTERMEDIATE LEVEL PERSONAL AND SOCIAL DEVELOPMENT AREAS

Personal and Social Development Areas	Self Observations for Behaviors to be Encouraged				Self Observations for Behaviors to be Improved			
	Pre Orientation Mean	Pre Orientation Standard Deviation	Post Orientation Mean	Post Orientation Standard Deviation	Pre Orientation Mean	Pre Orientation Standard Deviation	Post Orientation Mean	Post Orientation Standard Deviation
Dealing effectively with difficult situations.	1.7356	1.8592	1.2529	1.6211	1.4789	1.9465	0.4825	0.9868
Carrying through on assigned and agreed upon tasks with responsibility and effort.	1.8927	2.1653	1.5057	1.8179	1.0268	1.7418	0.5479	2.0330
Showing independence, initiative, and originality.	1.1494	1.6399	0.6705	1.0184	0.5939	1.1110	0.1954	0.5917
Showing honesty and integrity.	1.3448	1.5203	0.8736	1.2198	0.4713	0.9136	0.3218	0.7415
Showing consideration for the feelings of others.	2.2674	2.4475	2.3448	2.8789	0.9425	1.3925	1.2184	2.1309
Contributing to group interests and goals.	0.4559	0.8198	0.3410	0.7561	0.2146	0.5751	0.1034	0.3520
Dealing effectively with rules, conventions, and teacher suggestions.	0.9425	1.3274	0.5096	0.8841	0.3410	0.8958	0.1954	0.5786

TABLE 15

PEER PRE AND POST ORIENTATION OBSERVATIONS FOR BEHAVIORS TO BE ENCOURAGED AND BEHAVIORS TO BE IMPROVED IN THE INTERMEDIATE LEVEL PERSONAL AND SOCIAL DEVELOPMENT AREAS

Personal and Social Development Areas	Peer Observations for Behaviors to be Encouraged				Peer Observations for Behaviors to be Improved			
	Pre Orientation Mean	Pre Orientation Standard Deviation	Post Orientation Mean	Post Orientation Standard Deviation	Pre Orientation Mean	Pre Orientation Standard Deviation	Post Orientation Mean	Post Orientation Standard Deviation
Dealing effectively with difficult situations.	10.0766	5.4928	6.4981	4.4761	6.1992	5.7778	2.3908	2.6776
Carrying through on assigned and agreed upon tasks with responsibility and effort.	16.7105	9.3486	11.6973	8.2561	3.2414	3.8138	1.3295	1.8141
Showing independence, initiative, and originality.	5.8008	3.4068	2.8851	2.6563	2.2567	2.6846	0.8544	1.5719
Showing honesty and integrity.	6.4061	3.9841	3.5517	2.9290	5.5517	8.0548	2.9080	4.0619
Showing consideration for the feelings of others.	11.4330	7.0934	9.2912	5.6309	11.3908	10.4657	8.6169	9.1441
Contributing to group interests and goals.	3.7625	3.1533	2.0268	1.9853	1.8314	2.2792	0.6590	1.2870
Dealing effectively rules, conventions, and teacher suggestions.	4.7241	3.2582	2.5441	2.6171	2.3985	4.0051	1.6015	2.3636

TABLE 16

TEACHER PRE AND POST ORIENTATION OBSERVATIONS FOR BEHAVIORS TO BE ENCOURAGED AND BEHAVIORS TO BE IMPROVED IN THE INTERMEDIATE LEVEL PERSONAL AND SOCIAL DEVELOPMENT AREAS

Personal and Social Development Areas	Teacher Observations for Behaviors to be Encouraged				Teacher Observations for Behaviors to be Improved			
	Pre Orientation Mean	Pre Orientation Standard Deviation	Post Orientation Mean	Post Orientation Standard Deviation	Pre Orientation Mean	Pre Orientation Standard Deviation	Post Orientation Mean	Post Orientation Standard Deviation
Dealing effectively with difficult situations.	0.4483	0.7660	0.1571	0.4232	0.5211	1.0060	0.1916	0.6215
Carrying through on assigned and agreed upon tasks with responsibility and effort.	0.9579	1.7415	0.3027	0.7261	2.1571	3.2121	0.4559	1.0317
Showing independence, initiative, and originality.	0.2759	0.7183	0.0690	0.3086	0.7701	1.3505	0.1686	0.4497
Showing honesty and integrity.	0.3292	0.7314	0.0690	0.2686	0.2222	0.6937	0.0536	0.3116
Showing consideration for the feelings of others.	0.5287	0.9787	0.1916	0.5492	0.2950	0.7997	0.0843	0.3516
Contributing to group interests and goals.	0.3640	0.8513	0.1073	0.3873	0.4789	0.9222	0.0881	0.3221
Dealing effectively with rules, conventions, and teacher suggestions.	0.2107	0.5386	0.1034	0.3409	0.1954	0.5583	0.0575	0.2641

orientation observations dropped from the number reported in the pre orientation observations. Although these findings did support the second hypothesis stated earlier, they did not support the first hypothesis. Furthermore, the results appeared to be due more to the procedures involved in collecting the criterion data than to the effects of orientation. That is, the number of observations reported by teachers, peers, and individual students dropped uniformly regardless of the type of behavior being considered. These results cast serious doubt on the validity of the data collected by these procedures. Most students became increasingly frustrated with their use of the evaluation technique as each set of recalled observations was collected. They found the repeated use of this technique uninteresting and became more and more reluctant to report behavioral incidents emitted by their peers. Both of these reactions made the available data highly suspect.

The criterion measures were not altered for the subsequent PSDP investigations since all of the studies overlapped timewise. The results from the orientation study did lead to the development of alternate evaluation strategies described earlier in this chapter, but they were not developed in time for use in the other PSDP studies reported here. Rather, these strategies are currently being used in a field test sponsored by the United States Office of Education.

Subjective reactions to the PSDP orientation activities were also gathered from the participating students and teachers. These reactions are presented in Tables 22 and 23 of Attachment B provided at the end of this document. As can be seen from those tables, the reactions to the orientation program were quite positive. A majority of the students felt the booklets were easily readable, interesting, helped them understand their behavior, and interested them in learning to manage their own behavior more effectively. The nine teachers also reacted favorably and provided valuable suggestions for possible program revisions. Thus, the subjective data which were gathered from students and teachers indicated that the orientation materials and methods hold promise for familiarizing students with the PSDP. These data were extremely important because of the role of formative evaluation stressed throughout this project. However, the findings that the hypotheses of Study A received no objective support and the criterion instruments were so poorly accepted were disappointing. Objective data relating to student behavior change were desired so that summative evaluation conclusions regarding the impact of the PSDP orientation activities could be made. Such information did not result and no such conclusions were possible.

Study B--The Effect of Intermediate Level PLE Booklets in an Individualized Educational Setting. To control for classroom instructional variables which might influence the effectiveness of the PLE booklets, Study B was conducted in an individualized educational setting and Study C (to be described later in this chapter) was conducted in a more conventional setting in which teacher-directed group instruction was more typical. The PLE booklets were developed for individualized instructional settings, therefore, it was decided to conduct a study to investigate the mediating influences of instructional mode variables on the effectiveness of the PSDP. As originally designed, students in both instructional settings were to receive the PSDP orientation portion, however, the amount of student time available in the conventional classrooms prevented the PSDP orientation program from being administered. Therefore, this confounding variable limits the conclusions which can be drawn regarding the effectiveness of the program in the two types of instructional settings.

Subjects for Study B were the same as those used in Study A. Two treatments were used: one in which subjects received a PLE booklet specifically relevant to their first priority need, and the second in which subjects received a PLE booklet which was designed to remediate their second priority need. The second treatment was included in an attempt to examine the extent to which it is necessary in the PSDP to provide students with assistance in their most critical areas of need, and to determine if a PLE focusing on a specific behavioral area could influence behavior change in other PSDP areas as well.

Two hypotheses were formulated. First, that subjects who received a PLE booklet designed to encourage behaviors in their first priority need area would increase their performance of those behaviors more than would subjects who had the same first priority need area but who received a booklet designed to increase behaviors in their second priority need area. The second hypothesis was that subjects who received a PLE booklet designed to improve behaviors in their first priority need area would decrease their performance of those behaviors more than would subjects who had the same first priority need area but who received a booklet designed to improve behaviors in the second priority need area. The dependent variables and criterion measures were the same as those described in Study A. In addition to the criterion measures designed to collect data on overt behaviors, a questionnaire was administered to both teachers and students to obtain their reactions to being involved in the behavior modification portion of the PSDP.

Pairs of students within each of the nine participating classes were matched by both their first and second priority need areas. A priority need area was an area in which many behaviors to be improved were reported or an area in which only a few behaviors to be encouraged were reported. The reasoning behind the latter determination was that if a student were exhibiting many behaviors to be encouraged in an area, he was judged to be functioning at a fairly proficient level and was, therefore, not in need of increasing the frequency of those behaviors. If, however, he had performed only an occasional behavior to be encouraged in an area, the need to increase the frequency of such behaviors was deemed to be greater. Both the first and second need areas for each pair of students were always related to either encouraging behaviors or to improving behaviors. Only behaviors recorded by peers were used in making the first and second priority need determinations because these observations provided the most data. When the members of each matched pair of students were assigned to the two treatment conditions, one student received a PLE booklet specifically relevant to the first priority need area and the other student received the booklet relevant to the second priority need area. The subjects were matched by their first and second priority need areas, but the actual magnitude of those needs often differed slightly. That is, one student might have had ten Behaviors to be Improved in an area and he might have had to be matched with a student who had seven Behaviors to be Improved in that same area. In most cases, these assignments were made on a random basis once the pairs were identified, however, since they were subject to approval by the teachers from whose classes the subjects were drawn, a few changes (i.e., five) were made when teachers requested them.

The treatment phase of the study lasted for three weeks during which subjects worked on the booklets, and developed and carried out plans for modifying their behaviors. Specific activities incorporated in the PLE booklets

have been discussed in earlier sections of this chapter. Post treatment assessment data were collected over a two-week period following the same procedures as were employed in the pre treatment assessment phase (which for this study involved the post orientation study data).

By inspection, it was determined that the data did not warrant analysis of variance and covariance as originally planned. Since this study used the same data collection instruments that were employed in Study A, the results of Study A which showed that the ability of the instruments to measure actual behavior change was very doubtful, were equally applicable here. Teachers as well as students apparently tired of the data collection procedures and consequently reported fewer and fewer behaviors. The latter point is borne out by the fact that the predominant number of peer, self, and teacher recorded incidents in the data for Study B was zero. Because the distribution of scores was totally abnormal, Fisher's Exact Probability Test was used to determine the amount of change reported for each student in the PSDP area to which he was assigned. Once again, only the peer data were used since there were very few post treatment observations reported on the teacher and self reports. Behavior change scores were determined by subtracting the number of behavior incidents identified during the two weeks following PLE treatment from the number of incidents indicated during the two weeks preceding the treatment.

Only 7 of the 14 booklets had a large enough sample of subjects working on them to warrant analysis. Few students displayed needs in the other seven booklet areas as determined by the pre assessment data and consequently these PLEs were not widely used. The effects of the following PLE booklets were analyzed: PLE booklets for Behavior to be Encouraged in the areas of (1) showing independence, initiative, and originality; (2) showing honesty and integrity; (3) contributing to group interests and goals; (4) dealing effectively with rules, conventions, and teacher suggestions, and PLE booklet for Behaviors to be Improved in the areas of (5) dealing with difficult situations; (6) showing honesty and integrity; and (7) showing consideration for the feelings of others.

The first four booklets listed above are designed to increase the occurrence of effective personal and social behaviors. Thus, it was anticipated that the change scores would be negative for subjects who worked on those booklets. Since the other three booklets are designed to decrease the frequency of ineffective behaviors, the desired change scores for subjects who worked on them were expected to be positive. Therefore, for each booklet it was possible to state the direction subjects were hypothesized to move and to classify subjects into two categories: Ones who changed in the desired direction, and ones who either experienced no change or changed in the wrong direction.

For each booklet a 2 x 2 matrix was developed with one dimension representing the two categories of change while the other dimension included subjects who worked on their first priority booklet and subjects who received a booklet in their second priority need area. Fisher's Exact Probability Test was then applied. The results of these analyses for the seven booklets are contained in Table 17 on the next page. None of the results approached acceptable levels

TABLE 17

RESULTS OF FISHER'S EXACT PROBABILITY TEST FOR SEVEN BOOKLETS TESTED IN AN INDIVIDUALIZED INSTRUCTIONAL SETTING AT THE INTERMEDIATE LEVEL

Treatments	Subjects for whom treatment was a first priority need		Subjects for whom treatment was a second priority need		
	No change or change in the wrong direction	Change in the desired direction	No change or change in the wrong direction	Change in the desired direction	
PLE booklet for Behaviors to be Encouraged in the area of showing independence, initiative, and originality.	6	10	8	7	p=.30
PLE booklet for Behaviors to be Encouraged in the area of showing honesty and integrity.	5	4	8	4	p=.47
PLE booklet for Behaviors to be Encouraged in the area of contributing to group interests and goals.	12	4	15	3	p=.43
PLE booklet for Behaviors to be Encouraged in the area of dealing effectively with rules, conventions, and teacher suggestions.	10	4	8	7	p=.27
PLE booklet for Behaviors to be Improved in the area of dealing with difficult situations.	4	5	8	8	p=.25
PLE booklet for Behaviors to be Improved in the area of showing honesty and integrity.	6	6	6	6	p=.60
PLE booklet for Behaviors to be Improved in the area of showing consideration for the feelings of others.	10	15	11	16	p=.59

TABLE 18

RESULTS OF FISHER'S EXACT PROBABILITY TEST FOR THE FIVE PLE BOOKLETS TESTED IN A CONVENTIONAL INSTRUCTIONAL SETTING AT THE INTERMEDIATE LEVEL

Treatments	Subjects for whom treatment was a first priority need		Subjects for whom treatment was a second priority need		
	No change or change in the wrong direction	Change in the desired direction	No change or change in the wrong direction	Change in the desired direction	
PLE booklet for Behaviors to be Encouraged in the area of showing honesty and integrity.	5	3	4	2	p=.65
PLE booklet for Behaviors to be Encouraged in the area of contributing to group interests and goals.	9	1	9	1	p=.76
PLE booklet for Behaviors to be Encouraged in the area of dealing effectively with rules, conventions, and teacher suggestions.	6	2	5	1	p=.61
PLE booklet for Behaviors to be Improved in the area of dealing effectively with difficult situations.	1	8	0	13	p=.40
PLE booklet for Behaviors to be Improved in the area of showing consideration for the feelings of others.	5	3	4	2	p=.65

of statistical significance. Unquestionably, these results reflect the inadequacy of the criterion measures, particularly when those measures are administered numerous times. In the individualized settings, in which this study was implemented, criterion measures were administered six times--two weeks prior to orientation, two weeks following orientation but prior to the treatments, and two weeks following the treatments. Not only did teachers and students report fewer incidents of behavior over time, but they also commented to the administrators of the criterion instruments that they disliked the procedures. An alternative but expensive approach would have been to standardize the observation procedures by sending a trained observer into the classroom. Other alternatives would have involved fewer observational periods and the use of incentives to guarantee student cooperation.

Students' written reactions to the PLE portion of the PSDP were more encouraging than were the data provided by the statistical analyses. These responses are presented in Table 24 of Attachment B. This table includes both reactions of students in the individualized educational (i.e., Project PLAN) settings and the reactions of the students from the conventional instructional settings. Results are presented in terms of the per cent of individuals responding to the various question alternatives. Project PLAN students' reactions to the PLE treatment program were generally quite favorable. On the basis of some of their more constructive comments, revisions in the PSDP PLEs will be made in order to improve the program for further field testing. The nine teachers of the individualized classes also responded to a questionnaire of items similar to those to which the students replied. Their responses, suggestions, and comments on the PSDP and how it worked in their classes, are included in Table 25 of Attachment B.

Study C--The Effect of Intermediate Level PLE Booklets in a Conventional Educational Setting. Study C was conducted with 130 students from four classes volunteered by teachers in two schools located in the Soquel Union Elementary School District, Capitola, California. In these more conventional instruction settings, the orientation portion of the PSDP was not used. Except for that modification, the treatments, hypotheses, dependent variables, criterion measures, and experimental and statistical methods in this study were the same as those in Study B. In these four classes, only five booklets had large enough numbers of students working on them to justify the statistical analyses. These five were: PLEs for Behaviors to be Encouraged in the areas of (1) showing honesty and integrity; (2) contributing to group interests and goals; (3) dealing effectively with rules, conventions, and teacher suggestions; and PLEs for Behaviors to be Improved in the areas of (4) dealing with difficult situations; and (5) showing consideration for the feelings of others.

The results of the analyses on these five booklets are presented in Table 18 on the preceding page. One more time, the findings did not approach levels of statistical significance which would permit acceptance of either of this study's hypotheses. It is quite likely that the same mediating influences observed in Studies A and B confounded the results of Study C. Once again, however, the subjective reactions of these experimental students lent support to the behavior modification part of the PSDP. In Table 24 of Attachment B, these students are referred to as the "Non-PLAN Students" and, as indicated by the data there, fairly consistently reacted more positively than PLAN students to

PSDP prescriptive activities. For example, 63 per cent of them reported that their PLE booklets helped them understand themselves either "much better" or "better," whereas 48 per cent of the PLAN students recorded these statements. Also, 63 per cent of these students felt that the PSDP (as they understood it--i.e., without the orientation activities) "should be included in all my school's fifth- and sixth-grades each year," while 53 per cent of PLAN students felt this way.

The reactions provided by the four Soquel teachers who helped implement the PLE portion of the PSDP in their classrooms were somewhat less positive than were the responses of their counterparts in the individualized instructional setting. The results for both of these groups are contained in Table 25 of Attachment B. This discrepancy between Project PLAN and Soquel teachers' reactions might be partially explained by the fact that the PLE booklets were designed for an individualized setting in which the role of the teacher in assisting with their implementation could be much less structured than could the role of the teacher in the more conventional instructional settings. The activities contained in the PLE booklets are not teacher directed as instructional activities often tend to be in non-individualized instructional settings. Rather they are teacher assisted. Furthermore, students within a single individualized educational classroom often do not work on the same booklet, and even when they do, they are usually at different points within the booklet. These factors may have accounted for teachers' mixed reactions to the program. One topic on which most teachers and students in the two different instructional settings seemed to agree involved their frustrations both with the observational criterion instruments used in these studies and the fact that all students were assigned to PLE booklets even though they preferred to select other booklets which they believed were more appropriate to their immediate needs. Both of these frustrations should be eliminated when subsequent applications of the PSDP are made in non-experimentally contrived situations.

Study D--The Effect of Secondary Level PLE Booklets in a Conventional Educational Setting. This final study was conducted with 40 tenth-grade and eleventh-grade male students who were attending a private parochial school in Woodside, California, and who volunteered to participate in this pilot investigation. No separate control groups were used here because this study involved the first application of PSDP activities at the secondary school level and only preliminary field testing experiences were desired for the program's materials and procedures. On the basis of their results obtained from participating in the High School Social Situations Test (HSSST), which is the assessment portion of the PSDP at the secondary level, subjects selected the behavior modification goals and PLE booklets on which they wanted to work. Each student worked for three weeks on the PLE activities outlined in the booklet he selected.

The hypotheses investigated in this study were: (1) that students who worked on a PLE booklet designed to encourage, maintain, or produce a behavior would increase the frequency of that behavior; and (2) that students who worked on a booklet aimed at improving a behavior would decrease the frequency with which they performed that behavior. Prior to student participation in the HSSST, two weeks of pre-treatment data were collected on all students. The data collection procedure used was the same as that which has been described for the three preceding studies. The behaviors on which data were collected

at the secondary level are contained in the Complete Behavior List presented as Table 13 earlier in this chapter. Following the three-week treatment period, two weeks of data were again collected.

Because there were no matched pairs of subjects in Study D as there were in the preceding two studies, a different statistical analysis was performed on its data. In this study, pre-treatment and post-treatment numbers of behavioral incidents for the booklet area in which each student worked were compared by using the Wilcoxon Matched-Pairs Signed-Ranks Test. The teacher data in this study could not be used since there were insufficient observations to warrant analysis. Additionally, the small number of subjects (i.e., 40) made it impossible to analyze the effectiveness of individual booklets. Thus, all booklets aimed at encouraging or producing desirable behaviors were considered as a whole, as were all booklets aimed at improving undesirable behaviors. The results of these two separate analyses are presented in Tables 19 and 20 on the next page. Note that since students selected their PLE booklets, there is a difference between the number of students for whom data are reported in each of these two tables. The total number of subjects on whom these tables are based is not the original 40 because three students did not wish to continue their participation in the program and it was impossible to collect post-treatment assessment data on an additional three students.

When data on all booklets for encouraging or producing behaviors were considered, the results did not reach acceptable levels of statistical significance. Most of the change scores as indicated in the columns labelled "difference" in Table 19 were in a positive rather than the expected negative direction. However, the lack of statistically significant findings for these booklets is encouraging since they were able to retard any heavy downward trend in the number of post-treatment observations which might have occurred if the effects of repeated administrations of the observational criterion measure were the same confounding ones which influenced students and staff in the two studies discussed on the preceding pages of this chapter.

When all booklets aimed at reducing (improving) ineffective behaviors were considered, significant changes in the desired direction for peer and self observations were found at the $p<.02$ and $p<.003$ levels of significance respectively. However, because the criterion measures and procedures which were used here were the same as those used in the preceding studies, perhaps these significant findings should be considered in the light of previous evidence that a drop in the number of behaviors reported might be related to the measures and not to student behaviors. Nevertheless, there is a possibility that the PSDP booklets did have a desirable impact on many of the students in this study. On the basis of the peer observations, it can be seen in Tables 19 and 20 that the behavior of 6 of 12 students who worked on PLEs for Behaviors to be Encouraged, and 19 of 22 students who worked on Behaviors to be Improved PLEs changed in the desired direction. This suggests that further investigations with revised materials and procedures, larger samples of student subjects, and more of an experimental design than was used in Study D certainly are appropriate.

TABLE 19

RESULTS OF WILCOXAN MATCHED-PAIRS SIGNED-RANKS TEST FOR ALL PLE BOOKLETS DEALING WITH BEHAVIORS TO BE ENCOURAGED OR PRODUCED AT THE SECONDARY LEVEL

Self Observation of Critical Incidents				Peer Observation of Critical Incidents			
Student	difference (pre-post score)	Rank of d	Rank with less frequent sign	Student	difference (pre-post score)	Rank of d	Rank with less frequent sign
a	1	2.0		a	-3	-3.5	3.5
b	3	6.5		b	7	9.0	
c	3	6.5		c	4	5.5	
d	4	9.0		d	-4	-5.5	5.5
e	-3	6.5	6.5	e	-14	-10.0	10.0
f	10	10.0		f	12	11.0	
g	1	2.0		g	-6	-7.5	7.5
h	2	4.0		h	3	3.5	
i	-1	-2.0	2.0	i	6	7.5	
j	0			j	-1	-1.5	1.5
k	0			k	-1	-1.5	1.5
l	3	6.5		l	21	12.0	
		T = 8.5 N.S.					T = 29.5 N.S.

TABLE 20

RESULTS OF WILCOXAN MATCHED-PAIRS SIGNED-RANKS TEST FOR ALL PLE BOOKLETS DEALING WITH BEHAVIORS TO BE IMPROVED AT THE SECONDARY LEVEL

Self Observation of Critical Incidents				Peer Observation of Critical Incidents			
Student	difference (pre-post score)	Rank of d	Rank with less frequent sign	Student	difference (pre-post score)	Rank of d	Rank with less frequent sign
a	0			a	-2	-10.5	10.5
b	2	15.0		b	8	21.0	
c	1	6.5		c	14	24.0	
d	-2	-15.0	15.0	d	1	4.0	
e	1	6.5		e	-8	-21.0	21.0
f	1	6.5		f	6	16.5	
g	1	6.5		g	8	21.0	
h	2	15.0		h	-1	-4.0	4.0
i	1	6.5		i	2	10.5	
j	2	15.5		j	15	25.5	
k	-1	-6.5	6.5	k	0		
l	1	6.5		l	6	16.5	
m	-1	-6.5	6.5	m	15	25.5	
n	-1	-6.5	6.5	n	7	18.5	
o	1	6.5		o	1	4.0	
p	4	20.5		p	2	10.5	
q	1	6.5		q	7	18.5	
r	3	18.5		r	2	10.5	
s	3	18.5		s	2	10.5	
t	1	6.5		t	13	23.0	
u	-4	-20.5	20.5	u	1	4.0	
v	2	15.0		v	3	14.5	
		T = 45.0 p < .02					T = 35.5 p < .003

Subjective reactions and comments gathered from the participating secondary level students lend further suggestions of support to the effectiveness of the PSDP approach at these grade levels. The data summarized in Table 26 of Attachment B indicate that 72 per cent of the students stated that the program helped them understand their own behavior and that of other people, 66 per cent reported that it interested them in trying to manage and change their behavior to get better results from their actions, and 56 per cent decided that one or more of their personal and social behaviors improved because they worked on the program. None of these subjects suggested that other high school students should not take part in the PSDP; however, 56 per cent of them felt student participation should be on a personal choice basis. In addition to these supportive reactions, these high school students also noted a number of constructive suggestions which will be used in revising both the HSSST and the PLE activities for subsequent studies of the PSDP at the secondary level.

Current Status and Plans

PLEs described in this chapter are designed to help students overcome specific difficulties in school and to change their performance in specifiable ways. PLEs are applicable to all CCGS content areas, but in the project reported in this document attention was concentrated only on the academic-learning, educational-vocational, interpersonal (social), and intrapersonal (personal) areas. PLEs in the career (i.e., life) areas of citizenship and leisure are considered equally important and during subsequent research and development activities on the CCGS, effort must be devoted to expanding this component into these two areas.

In addition to extending Component No. 6 into the areas of citizenship and leisure, plans are being made to investigate the effectiveness and efficiency of the academic-learning and educational-vocational PLEs in helping students resolve their prescriptive needs. If possible experimental investigations similar to those reported in this chapter for PLEs in the personal and social content areas will be implemented. On the basis of information obtained from the investigations of the PSDP, revisions in the program are anticipated at both the intermediate and secondary levels, and further criterion-referenced and quasi-experimental investigations will be conducted. Example revisions which are being considered for the PSDP include: incorporating more group interaction activities, expanding the orientation to the program at the secondary level, and providing students with more information on what each area of personal and social behavior involves before presentations of behavior modification strategies are made. In all of the six content areas, extensions and modifications must be made in the whole PLE approach so that it can be applied at the primary grade levels.

As new and revised PLEs are tested in the future, several questions of interest will continue to be examined. Can students acquire a sufficient understanding of the behavior modification techniques presented in the PLEs in order to use them in a plan to modify their behaviors? Does the relationship of the counselor or teacher with his students affect how students make use of the PLE help made available to them? If students do change their behaviors and overcome their initial difficulties as a result of the PLEs, are

the effects long-lasting and do they generalize to other problem areas so that these students are able to cope with later concerns without prescriptive assistance?

PIEs are intended to eliminate difficulties and existing barriers which impede students' successful career planning and development. On a long-range basis, the reduction of these difficulties helps to determine whether or not youth will successfully implement their career plans and reach the goals to which they aspire. The instructional-counseling process which is used in helping students change their behavior and overcome their unique problems may well increase their ability to formulate plans, at least on a short-range and intermediate-range basis, and to follow through on plans thus formulated. If consistent improvements can be made in extending school resources and services in Component No. 6, students will be assisted to increase the quality and the benefits received from their career and life development activities.

APPENDIX--CHAPTER IX

Catalogue of Available Materials

PERSONAL-SOCIAL AREA

1. AIR* developed within-school prescribed learning experiences and evaluation materials for a Personal and Social Development Program.

   Dealing Effectively with Difficult Situations

   Intermediate Level
   - Success-O-Grams
   - PLE for Behaviors to be Encouraged
   - PLE for Behaviors to be Improved

   Secondary Level
   - PLE for Producing Behaviors
   - PLE for Encouraging or Maintaining Behaviors
   - PLE for Reducing or Eliminating Behaviors

   Showing Strength of Character and Integrity

   Intermediate Level
   - Success-O-Grams
   - PLE for Behaviors to be Encouraged
   - PLE for Behaviors to be Improved

   Secondary Level
   - PLE for Producing Behaviors
   - PLE for Encouraging or Maintaining Behaviors
   - PLE for Reducing or Eliminating Behaviors

   Contributing to Group Interests and Goals

   Intermediate Level
   - Success-O-Grams
   - PLE for Behaviors to be Encouraged
   - PLE for Behaviors to be Improved

   Secondary Level
   - PLE for Producing Behaviors
   - PLE for Encouraging or Maintaining Behaviors
   - PLE for Reducing or Eliminating Behaviors

*American Institutes for Research

Showing Consideration for the Feelings of Others

Intermediate Level
Success-O-Grams
PLE for Behaviors to be Encouraged
PLE for Behaviors to be Improved

Secondary Level
PLE for Producing Behaviors
PLE for Encouraging or Maintaining Behaviors
PLE for Reducing or Eliminating Behaviors

Carrying Through on Assigned and Agreed Upon Tasks with Responsibility and Effort

Intermediate Level
Success-O-Grams
PLE for Behaviors to be Encouraged
PLE for Behaviors to be Improved

Showing Independence, Initiative, and Originality

Intermediate Level
Success-O-Grams
PLE for Behaviors to be Encouraged
PLE for Behaviors to be Improved

Dealing Effectively with Rules, Conventions, and Teacher Suggestions

Intermediate Level
Success-O-Grams
PLE for Behaviors to be Encouraged
PLE for Behaviors to be Improved

Showing Leadership

Secondary Level
PLE for Producing Behavior
PLE for Encouraging or Maintaining Behaviors
PLE for Reducing or Eliminating Behaviors

General Guide-Intermediate Level

Teacher Supplement-Intermediate Level

Guide for the Personal and Social Development Program: An Application of a Social Situations Test and Behavior Modification Principles.- Secondary Level

Performance Record

Complete Behavior List

Student Reaction Sheet- PDSP Prescribed Learning Experience Booklets-Intermediate Level

Student Reaction Sheet-PSDP Prescribed Learning Experience Booklets-Secondary Level

Final Teachers' Reactions Sheet-PSDP Prescribed Learning Experience Booklets-Intermediate Level

For more information on the materials write to: American Institutes for Research
Guidance Research Program
P.O. Box 1113
Palo Alto, California 94302

EDUCATIONAL VOCATIONAL AREA

1. Units prepared by AIR for an individualized educational-vocational guidance program.

   Dropout
   Selling Yourself

   For more information write to: Dr. Calvin D. Catterall
   Coordinator, Counseling and Psychological Services
   Santa Clara Unified School District
   1889 Lawrence Road
   P.O. Box 397
   Santa Clara, California 95052

2. Instructional-counseling materials developed by AIR for the guidance program in Project PLAN.

   Information about Colleges
   Part-time Job Application Skills

   For more information write: Westinghouse Learning Corporation
   2680 Hanover Street
   Palo Alto, California 94305

3. ILS systems of computerized data banks:

   The Interactive Occupational Exploration System
   The Interactive College Suggesting System
   The Career Training Information System
   The Interactive Scholarship Finding System

   For more information write: Interactive Learning Systems, Incorporated
   1616 Soldiers Field Road
   Boston, Massachusetts 02135

LEARNING AREA

1. Academic-learning PLEs and evaluation materials developed by AIR:

Secondary Level:

Not Passed--Now What?
The PQRST Technique
Planning Your Learning
Scheduling Your Study
Increasing Your Profit in the Business of Learning

Planning Your Learning in Individualized Education: Intermediate and Secondary Levels

Counseling Personnel's Guide for Group Counseling--Learning Behaviors: Intermediate and Secondary Levels

Semantic Differential

Academic Attitude Inventory

Time Evaluation Form

Study Effectiveness Form

For more information write to: American Institutes for Research
Guidance Research Program
P.O. Box 1113
Palo Alto, California 94302

2. Instructional counseling materials developed by AIR for the guidance program in Project PLAN

Strategies for Test Taking
Study Skills
Listening Skills

For more information write to: Westinghouse Learning Corporation
2680 Hanover Street
Palo Alto, California 94305

CHAPTER X

COMPONENT NO. 7--ORIENTATION-OUT

The second aspect of the CCGS Prescriptive Phase (cf. Table 1 on page 36) is Component No. 7 which focuses on the specific preparation needed by youth who depart from some part of a school setting or educational system or program. The general purpose of this component is to help each student acquire the various kinds of information, attitudes, and overt behavior he needs in order to function effectively when he makes one of these changes. "Orientation-out" is the label attached to those prescribed learning experiences for youth who have concerns distinguishable from the needs of youth in general (i.e., those needs emphasized in the Developmental Phase of CCGS) and from the prescriptive needs of individuals remaining in school (i.e., those needs described in the previous chapter). In addition to relating closely to Component No. 6, Orientation-out is connected with Component No. 1, "Orientation-in" (cf. Chapter IV) which stresses the needs of youth beginning their involvement in a new educational system or specific program and in the specific school setting in which that system or program functions. Component No. 7 concentrates on the needs of youth terminating such involvement and pursuing career alternatives for which there is no assurance that orientation-in experiences will be available.

Since in this project emphasis was placed on intermediate and early secondary school students, Component No. 7 and the needs of such target groups as dropouts or graduates received sufficient attention only to identify some relevant objectives and a few prototype learning strategies. Extensive attention must be directed toward these groups' needs during future stages of CCGS research and development. The remaining sections of this chapter will summarize this project's preliminary activities and present a number of suggestions for activities which should be conducted during subsequent investigations of this important CCGS component.

Identifying Student Orientation-out Needs

There is little available information on the needs of youth who leave one aspect of the school system and enter another or move from one school setting to another. The transition needs of elementary school students who enter intermediate grade levels or those of intermediate students who graduate to secondary schools must be documented. Similar attention must be directed toward identifying the needs of youth who exit from one educational program or system, such as individualized education, and enter (or re-enter) another, such as more conventional group instruction.

One area of youth orientation-out needs which has recently received more attention is that involving transition problems faced by youth who leave school before completing their graduation requirements. Federal and state government support of programs related to the needs of those who leave school early has led to the implementation of a myriad of school dropout prevention and assistance programs. A review of the literature on dropout prevention studies was not conducted during the current project but should be attempted in the near future in order to determine both what

procedures are being used to assess the needs of such youth and what needs data are available for program and strategy design and evaluation.

During this project, preliminary attempts were made to identify youth orientation-out needs by concentrating primarily on an examination of follow-up studies of school graduates. The questionnaires used in these studies were reviewed in order to identify those questions which asked respondents to indicate the types of assistance which they wished they had received while they were in school and were contemplating their transition between school and the out-of-school alternatives available to them. Some additional project staff time was spent surveying studies which reported the perceptions of adults who claimed both that they had close contact with either graduates or non-graduate dropouts and were cognizant of the needs of such youth. For example, Garbin, et al. (1957) used interviews and questionnaires to determine what a nonrandom sample of 69 "respected" vocational educators felt were the social and psychological problems faced by youth in their transition from high school to work. Of the 49 adjustment problems reported, the four which received support from more than 40 percent of the adult respondents were : (1) unrealistic aspirations and expectations, (2) poor attitudes toward work and working, (3) lack of responsibility, maturity, and self-discipline, and (4) lack of knowledge of the real demands of work.

The Denver Public Schools (1962) used survey questionnaires and counselor-conducted interviews with employers of its 1961 high school graduates in order to draw implications concerning the preparedness graduates had for their occupations. The report of this follow-up study's results indicated that if the schools were going to help graduates better prepare for employment, they should provide additional training in order to help youth develop: (1) pleasing personalities, (2) enthusiasm for work, (3) dependability, (4) punctuality, (5) loyalty, (6) ability to meet the public, (7) adjustment to the job, (8) awareness of good personal hygiene and grooming, and (9) skill in applying for jobs. Statements from studies such as these two describe abstract needs which must be operationalized more specifically in terms of youth current competencies and desired or terminal outcomes which could influence program and strategy development and evaluation. If these needs are appropriate for all current youth, they should be addressed by instructional-counseling programs in the CCGS Developmental Phase, and not on a corrective or remediative basis in the Prescriptive Phase. However, these statements probably are applicable to some youth and not to others. If this is the case, the more specific needs assessment data which must be gathered should be used to shape the design and evaluation of prescriptive programs in Components Nos. 6 and 7.

The limited youth needs information which was collected in this project and which was perceived as being related to the orientation-out component served as the basis for staff development of a few instructional-counseling objectives. These objectives could serve as guidelines for the design of a small sample of PLEs. Since most of the available data stressed educational-vocational needs, the majority of the objectives fall within this area. Some examples of these are provided on the following pages.

OBJECTIVE: To have employment-seeking skills needed to find job openings.

Student Outcomes:

1. Describe at least four of the following places where information about job openings can be sought: personnel departments, newspaper want ads, government agencies, private employment agencies, state employment offices, school or college placement services.

2. Identify at least two advantages and disadvantages of each of the above sources of information on job openings.

3. Write an acceptable position-wanted ad, explaining personal qualifications as well as conditions and rewards being sought in prospective jobs.

OBJECTIVE: To demonstrate that you have explored several alternative job opportunities which interest you and are related to your other personal characteristics.

Student Outcomes:

1. Identify sources of information about specific job openings.

2. Use relevant and reliable sources of information to inquire about at least three jobs which both interest you and relate to some of your other personal characteristics.

3. Present a written or oral description of the alternative job opportunities you explored.

OBJECTIVE: To demonstrate effective application and interviewing skills and to explain the difference between these and ineffective skills.

Student Outcomes:

1. Recognize ways a person can provide information about himself when applying for: (a) a job, (b) admission to a college or university, (c) admission to a military service, and (d) admission to a training program.

2. Complete a sample application form which meets acceptable criterion levels of completeness, accuracy, and neatness for: (a) a job, (b) admission to a college or university, (c) admission to a military service, and (d) admission to a training program.

3. Identify at least three characteristics which would disqualify completed application forms for each of the four opportunities listed above.

4. Prepare a resumé of your characteristics and qualifications for the educational and vocational opportunities you are considering. In this resumé summarize:

   (a) information on your abilities, interests, values, personal and social behavior, and physical features

   (b) educational qualifications

   (c) previous work experience

   (d) references available, people who know you personally and who can speak to your educational and occupational qualifications

   (e) types of future educational and vocational experiences you desire

5. Identify and explain the difference between the effective and ineffective interviewing skills demonstrated by audio-taped, videotaped, and filmed interviewees for various educational and vocational opportunities.

6. Role play an interviewee for one educational and one occupational opportunity and demonstrate at least 10 effective interviewing skills from a list of skills including acting with poise and enthusiasm, being appropriately dressed and groomed, having available necessary information which interviewers might request, explaining what conditions and rewards are desired in the available opportunity, and outlining personal qualifications for that opportunity.

7. In preparation for leaving school, apply for (a) a job, (b) admission to a college or university, (c) admission to a military service, (d) admission to a training program, or (e) admission to another post-school alternative. Evaluate your application as acceptable on at least 80% of the characteristics contained in a list of effective application characteristics.

8. In preparation for leaving school, conduct at least one interview for one of the five alternatives noted above. Evaluate your interview performance as acceptable on at least 80% of the skills contained in a list of effective interviewing skills.

OBJECTIVE: To identify and evaluate types of financial assistance for the post-high school education and training goals you are considering.

Student Outcomes:

1. Identify and evaluate financial assistance types such as:

   (a) state scholarships

   (b) college, school, or institute scholarships

   (c) private scholarships

   (d) loans

   (e) work-study programs

   (f) part-time jobs

   (g) G. I. Bill

2. Explain the kinds of information typically included on financial-aid applications.

3. Interpret requirements or restrictions (e.g., citizenship, G.P.A. level for acceptance and/or maintenance, part or all of funds having to be repaid at specified interest rates by a specified date, work obligations for the stipend) often attached to scholarships, loans, or other types of financial assistance.

OBJECTIVE: To explain (a) the responsibilities which the government expects people like you to have in the area of military service, (b) the alternatives which are available for your completing these military obligations, and (c) the possible results of each of these alternatives.

Student Outcomes:

1. Define the terms *draft*, *draft lottery*, *selective service*, *conscription*, and *conscientious objector*.

2. Obtain information on current draft laws and compare draft, enlistment, reserves, and commissioning on the basis of these factors:

   (a) entry requirements

   (b) length of service (active and reserve)

   (c) education and training opportunities available

(d) financial and non-financial consequences (salary, G. I. Bill, eligibility, etc.)

(e) associated vocational career fields

3. Explain the responsibilities which the government expects 18-year-old males to have in connection with registering for the draft.

4. Identify examples of the five groups (Classes I-V) that local selective service boards use for classifying draft registrants, and the main steps a registrant can take if he chooses to appeal his classification.

5. Compare major alternatives such as the following which are open to men who wish to fulfill their military obligation: draft, enlistment, reserves, and commission.

6. Describe at least two positive and two negative consequences each of these major alternatives might have for you.

7. Compare the present selective service system with alternative methods of meeting the nation's defense manpower needs.

OBJECTIVE: To know (a) variables which can influence a woman's career planning, (b) different work patterns frequently followed by women, and (c) types of work opportunities available to women.

Student Outcomes:

1. Describe how variables such as the following can influence a woman's career planning:

   (a) marriage

   (b) child rearing

   (c) family income needs

   (d) personal fulfillment

   (e) societal needs

   (f) professional commitment

2. Identify work patterns such as the following which are frequently pursued by women and illustrate how these patterns might influence a girl's immediate post-high school goals:

(a) constant employee

(b) in-out-in employee

(c) in-out employee

(d) novice employee

3. Illustrate different types of work opportunities such as the following which are available to women:

(a) regular part-time work

(b) work in the home

(c) full-time work

(d) temporary or seasonal work

(e) volunteer work

A number of more general objectives such as those listed below have been identified from the rather limited body of needs assessment data obtained from this project staff's preliminary literature review. These general statements suggest areas for future research and development efforts but must be formulated in more measurably observable terms delineating related student outcomes before attempts can be made to design counseling and guidance programs or strategies from them.

1. To recognize the available alternatives (including how to get a high school education through another method such as correspondence classes, continuation school, or instruction from visiting teachers) and their possible consequences when you leave school without specific goals or plans for your immediate future.

2. To select at least one career (i.e., life) goal which will help give your life meaning and purpose in the immediate, and hopefully in the long-range, future.

3. If you decide to leave school without definite goals and plans, to explain your reasons for doing this and to thoughtfully participate while at least one teacher or counselor helps you explore alternatives open to you.

4. To explore your alternatives and make decisions wisely when you are faced with problems of pregnancy outside of marriage.

5. To learn ways of preparing for marriage and setting up a household.

Classifying Objectives by Commonalities and Assigning Priorities

Even though only a small sample of orientation-out needs and related objectives was identified in the current project, it is possible to describe several types of tentative groupings into which such objectives might be classified. One approach would be to divide needs and objectives into two major clusters: those of youth who are remaining within the K-12 school context but are making transitions from one aspect of it to another; and those of youth who are terminating their involvement at some grade level in the K-12 context. The first cluster could be redivided into categories similar to those used for orientation-in needs and objectives discussed in Chapter IV. These sub-categories include orientation-out of: (1) one school setting and preparation for entry into another setting, (2) one educational system in a specific school setting and preparation for entry into another system, and (3) one instructional-counseling program within an educational system and preparation for entry into another program. Orientation-out experiences should be provided for students making any one of these three transitions, particularly if no orientation-in activities were to be provided once students had made their changes. Sometimes student and system needs must be resolved before students complete such changes. For example, junior high school students usually need orientation assistance before they attend high school or else they will not be able to select their high school courses of study wisely. In most high schools, this selection process cannot be left until the fall of each year because class lists and teacher assignments must be programmed well in advance.

The general cluster of needs and objectives related to those who leave school might be subdivided by youth characteristics and qualifications (e.g., high school graduates vs. non-graduates) and by the tentative goal areas (e.g., military enlistment, world of work, continued education and training, marriage) they are pursuing, or by the fact that they lack tentative goals. One further way by which all objectives in the above sub-categories might be classified is according to the nature of the content areas of the personal needs described by these objectives. For example, most of the example objectives listed in the previous section involved educational and occupational needs statements. However, youth experience transition problems which cannot be categorized into these two areas. A complete classification scheme based on this dimension would involve categories built on the six content areas (e.g., educational, vocational, personal and social, etc.) listed on pages 34 and 35 of Chapter III.

Since few attempts have been made to conduct an extensive needs assessment in this CCGS component, the problem of establishing priorities among and within available sets of objectives has not been faced with any seriousness. As indicated by the general and specific objectives listed earlier in this chapter, those who leave before graduation in addition to graduates have been the only youth groups which have received attention in projects or

programs contacted during this study. The post-high school activities of these groups in the areas of pursuing educational and occupational alternatives, including military service obligations for males and marriage and vocational options for females, have been emphasized in the available statements of youth-oriented objectives. No empirical data are available to support the designation of these as the objectives which should receive top priority attention. This concern for an empirical base for the setting of priorities and for the conducting of an effective and efficient process leading to the specification of priority objectives is something which must be given concentrated emphasis when future attempts are made to develop this component more thoroughly.

Specifying Alternative Strategies for Fulfilling Student Orientation-out Needs

The number and variety of available and possible strategies for helping youth achieve orientation-out objectives are large. Computer-based approaches involving either on-line or batch processing facilities are currently available to provide youth with up-to-date information on both sources of financial assistance for post-high school education and sources of training and job openings. Films and videotapes are being used to present youth with social models demonstrating desirable and undesirable job interviewing skills. The purpose of these audiovisuals is to help viewers discriminate between the two types of skills and to learn the most effective interviewing techniques (cf. Prazak, 1969). For similar purposes, role playing and group counseling experiences are being structured, so that students can practice and receive informative feedback on their performance of employment seeking and interviewing behavior patterns (cf. Walker, 1969). As is usually the case, printed materials including workbooks eliciting active responses from students are also available on such topics as men's obligations and options in the area of military service and women's post-high career planning.

One set of available resources published by the Westinghouse Learning Corporation for a system of individualized learning uses a format consistent with the instructional-counseling unit approach recommended throughout this document. The instructional materials which are incorporated into this set of learning packages are all copyrighted by Westinghouse and tend to over-emphasize reading activities which provide students with limited exposure to a variety of resources and experiences which could be both more appropriate to their learning styles and more motivating. These "post-high school transition" units include topics such as a review of immediate post-high school options and prospective adult roles, a summary of information and information sources which should facilitate high school graduates' selection of colleges and universities, and a presentation of a variety of draft and military service facts. One of these units is illustrated in the next section of this chapter while a complete listing of the titles of the set of available units is contained in the appendix of resources provided at the end of this chapter.

Many follow-up and needs assessment studies conclude with suggestions for activities and resources which could provide desirable orientation-out learning experiences for youth leaving high school before or after graduation. For example, Garbin et al. (1967) summarized what a sample of vocational educators identified as possible strategies which could help youth overcome problems they face when making the transition from high school to work. The list of suggested materials and activities included field trips, employer lectures, supplementary teachers presenting specific orientation-out topics, simulated workshops, written materials, special projects conducted by the youth, work-sample kits, tests, and audiovisual resources. Although a list of resources like these is impressive, if they are going to be part of a variety of instructional and counseling experiences in an individualized educational context, a series of difficult but important tasks must be completed. These tasks include: (1) deciding the desired student outcomes which they could produce, (2) comparing these with what is known about the orientation-out needs of the youth in the target population, (3) formulating instructional-counseling objectives for appropriate resources, (4) presenting these resources in a format and sequence conducive to learning, and (5) developing evaluation methods which will enable each student to decide which objectives he had achieved.

Selecting, Designing, Scheduling, and Implementing Strategies

No attempts were made in this project to select and implement specific orientation-out strategies since attention was focused on the intermediate and early secondary grade levels and the needs of school dropouts in this grade range were not considered. Although instructional packages the Westinghouse Learning Corporation copyrighted for use in a post-high school transition program have not had extensive use with students, they are illustrative of the type of learning unit approach this document recommends as a desirable procedure for individualizing guidance and counseling assistance. The student directions sheet for a unit on "Draft and Military Information" is illustrated in Table 21 on the next page. Like units illustrated by student guide sheets presented in previous chapters, the one in Table 21 indicates that students are given: (1) the instructional objectives of the unit, (2) sample questions indicating how students might recognize if these objectives had been achieved, (3) a list of available instructional resources, and (4) suggested activities which should facilitate the learning process. Even though reading strategies are stressed in the Westinghouse units illustrated by this directions sheet, students are also encouraged to engage in out-of-school contacts (i.e., with the local selective service board), small group discussions with other students, and essay writing. Once they have completed these learning activities, students take an end-of-unit test to determine the extent and nature of their learning progress.

TABLE 21

EXAMPLE ORIENTATION-OUT LEARNING UNIT

19-707-2 | DRAFT AND MILITARY INFORMATION | PLAN 20

(Note to students: Girls as well as boys should complete all steps in this TLU.)

Step 1. OBJECTIVE:
9582 Define the terms *draft*, *selective service*, and *conscription*.

USE	DO
Instructional Guide	(a) Read Part 1 of the IG.
The Draft and You	(b) Read chapter 2, pp. 29-41.

Step 2. OBJECTIVE:
9583 Describe the responsibilities that every 18-year-old male has in connection with registering for the draft.

USE	DO
The Draft and You	(a) Read Chapter III, pp. 42-49 (to "Consequences of failing to register or of not carrying your draft card"). On a separate piece of paper, make a list of the steps that every 18-year-old male must go through when he first registers at his local selective service board. Then, list the main ongoing responsibilities he has to his board after he has completed the act of registering. (b) Read Chapter III, p. 49 (from "Consequences of failing to register or of not carrying your draft card) to p. 51 (to "Your Selective Service file").

Step 3. OBJECTIVE:
9584 Identify examples of the five groups (Classes I-V) that local selective service boards use for classifying draft registrants, and the main steps a registrant can take if he chooses to appeal his classification.

Example: Which of the following selective service classifications belongs in Class I?

A. Extreme hardship deferment
B. Over the age of liability for military service
C. Available for military service
D. Not qualified for any military service

USE	DO
Occupations and Careers	(a) Read the chart on p. 73, "Classifications for Military Service."
The Draft and You	(b) Read chapter IV, pp. 57-66.
Instructional Guide	(c) Read Part 2 of the IG.
The Draft and You	(d) Read chapter IV, pp. 67-79 (to "Reopening and changing your classification").
Instructional Guide	(e) Read Part 3 of the IG.
The Draft and You	(f) Read chapter V, pp. 89-111 (to "General comments on appeals").
	(g) Periodically Congress, sometimes at the request of the President, amends the Military Selective Service Act of 1967 to change conditions for deferments. Contact the selective service board in your local area (by letter, telephone, or a visit) to find out if, in the last year, specific changes have been made in the classification system.

Step 4. OBJECTIVE:
9585 Describe the way that "available" draft registrants are selected for induction.

USE	DO
Instructional Guide	Read Part 4 of the IG.

Step 5. OBJECTIVE:
9586 Compare the major alternatives open to men for fulfilling their military obligation: draft, enlistment, reserves, and commission

USE	DO
Instructional Guide	(a) Read Part 5 of the IG.
Occupations and Careers	(b) Read pp. 73-88 (beginning with "The Armed Forces").
Instructional Guide	(c) Find two other students to do Part 6 of the IG with you. Each of you should select one of the three case studies provided. Review the case you selected and write down other possible alternatives that the individual might have considered. The references in Part 7 of the IG may suggest some possibilities. Present your information to the other members of the group and get their reactions.

Step 6. OBJECTIVE:
9587 Compare the present selective service system with alternative methods of meeting the nation's defense manpower needs.

USE	DO
Instructional Guide	(a) Read Part 8 of the IG. (b) Meet with three other students. Each of you should select at least one of the following alternatives to the selective service system so that all the alternatives are covered. 1. A professional, all-volunteer army 2. Mandatory service for all males (such as the Swiss "citizens'" army) 3. Mandatory service for both sexes (such as the Israeli system) 4. Alternatives to military service under the present laws (such as the Peace Corps and VISTA) Research the topic you chose and write a short essay evaluating the alternative in relation to the present American selective service system. Meet with the other members of your group to discuss the strengths and weaknesses of the alternative systems of national service. (c) Based on your reading, writing, and group discussion, decide which of the systems provides the most equitable and effective form of national service. If none appears satisfactory, design your own system. Then write a letter to your Congressman in which you describe your recommendations for a system of national service. Show all your work for this step to your teacher.

Evaluating Strategies and Providing Feedback and Correction

Criterion instruments and procedures for assessing student achievement of behavioral objectives related to orientation-out experiences were not developed during the project summarized in this document. However, as in all CCGS direct and indirect intervention components, attempts should be made to design and use strategies which will assess student knowledge, attitude, and overt performance outcomes specified in needs statements and related objectives. Evaluation strategies should include end-of-unit tests which identify the immediate effects of orientation-out activities, survey tests which cover immediate effects of a series of units if students have engaged in more than two units of activities, and follow-up strategies which determine the long-range impact of orientation-out units. Since all of these evaluation approaches should be criterion referenced (i.e., based on helping students determine which objectives they have achieved and which ones are yet to be achieved), they should be used to provide both feedback data related to student performance on each appropriate orientation-out objective and suggestions for subsequent learning activities if certain objectives have not been attained.

One major evaluation problem relates to youth who either change from one school setting to another but stay within the K-12 context, or leave school before or after graduating. Determining the immediate impact of single orientation-out units or a series of units should not be problematic if end-of-unit and short-range survey tests are used. However, the long-range effects of such units are the ones which should be given priority attention but will be difficult to determine. Conclusions regarding how the orientation-out prescribed learning experiences influenced the behavior of youth after they completed their transitions necessitate follow-up investigations of youth's subsequent activities. This will demand more detailed performance-oriented data than are gathered in typical follow-up studies and this type of improved data collection can be both difficult and expensive to design and implement.

Current Status and Plans

As indicated throughout this chapter, much work needs to be done on this orientation-out component of the CCGS. Improved instruments and procedures must be employed in the needs assessment of youth who for different reasons terminate their involvement with various aspects of schools. Such procedures must include assessments prior to, or at least on the date of exit, as well as during follow-up investigations within both the first two or three months and the first or second year after the exit date. These improvements are necessary because most of the available data on youth orientation-out needs have been the products of general questionnaire items administered in follow-up studies of high school graduates (cf, studies discussed on pages 26ff in chapter III). This type of data has not always provided meaningful guidelines for the design and evaluation of guidance and counseling programs or specific prescribed learning experiences.

Priority tasks which should be completed on this component include: (1) literature review of the results of the available programs and studies which have focused on the needs of youth making significant transition either within school systems or out of them; (2) identification of major target populations of youth currently experiencing transition problems; (3) comprehensive and meaningful (i.e., for program and strategy design and evaluation purposes) assessment of the needs of such youth and the problems with which they want assistance; (4) formulation of a more complete list of instructional-counseling objectives related to the needs assessment data; (5) linking available counseling, instructional strategies, and evaluational strategies to appropriate objectives from the list; (6) development of more complete evaluation procedures (including performance measures to be used in follow-up studies) for available counseling and instructional resources; (7) design and implementation of a series of investigations to study the effects of currently available resources; and (8) revision of currently available resources, development of resources where gaps exist, and continued evaluation of all such strategies.

During subsequent research and development activities on the CCGS, priority will be given to the sixth and seventh tasks so that currently published units, materials, and methods related to the CCGS individualized learning context can be evaluated as possible prototypes for subsequent expansion of this orientation-out component One key variable which must receive attention in all tasks listed above is the extension of research and development activities into other youth career goal areas besides those involving educational and vocational planning. Possible needs in the areas of social responsibility (i.e., citizenship) training, personal and social development, and use of leisure time must also be assessed and emphasized if they are identified as top priority concerns of youth.

Catalogue of Available Materials

To the knowledge of the project staff, the only instructional-counseling units which have been developed for an individualized educational program are those available through the Westinghouse Learning Corporation. For detailed information on these, write to:

IPAR
Westinghouse Learning Corporation
[illegible] Hanover Street
Palo Alto, California 94305

The following are the titles of the units the American Institutes for Research have used for Westinghouse's "post-high school transition" program:

After High School, What?

Information About Colleges

Draft and Military Information

Speech -- Job Opportunities

Application Skills

Preparing for Leaving High School: Applying

Preparing for Leaving High School: Interviewing

CHAPTER XI

COMPONENT NOs. 8-12--INDIRECT INTERVENTIONS

Preceding chapters on the first seven components of the CCGS emphasized both youth-oriented needs and learning activities which are employed directly with youth. When the various direct interventions which were discussed focused on sequential learning experiences for all youth, they formed the Developmental Phase of the CCGS, and when they presented learning activities prescribed for specific problems of individuals, they were grouped into the Prescriptive Phase. This final chapter summarizes the remaining five CCGS components all of which involve the implementation of human and technological resources to introduce changes in the environmental conditions around youth. These are changes implemented on benalf of youth in order to assist them to protect and develop their potentialities.

The fact that these final five CCGS components are all presented in one chapter indicates the desired distribution of priorities among direct and indirect interventions. The rationale underlying the systematic planning approach recommended for the CCGS reserves priority attention for identification of youth needs through both the developmental and prescriptive phases. Specifically, Assumption No. 5 discussed on pages 18 and 19 of Chapter II states that indirect interventions are important but only in the context of each youth and his progress, as such information is made available through the two direct intervention phases of the CCGS. This preference reflects the division of effort that was made by the staff throughout this project. Because of these priorities, project time and resources were weighted heavily in favor of the research and development activities described in previous chapters of this document. Since little effort was directed toward the components outlined here, the presentation format used in the preceding seven chapters will not be repeated. Instead, each indirect intervention component will be outlined in a separate section which briefly summarizes topics such as the following, when they are appropriate: (1) its general nature and purpose, (2) research and development activities which have been attempted, and (3) suggestions for activities which should be attempted during later investigations of it.

Youth and System Needs

Whereas CCGS direct intervention components are based on youth-oriented needs, the indirect interventions discussed in this chapter are founded on system-oriented needs which must directly be tied to youth needs' statements. Since the distinction between these two general types of needs was only briefly discussed in Chapter III, it is presented in more detail here. A common mistake made by planners of guidance and counseling programs is to specify their program objectives in terms of their needs for staff, equipment, facilities, and institutional services. It is an error--from the point of view of social systems planning--to operate on the assumption that the existence of agencies or institutions, or parts of them, can be justified independently of both an accurate determination of the needs of their clients and a clear specification of needs statements describing desired competencies of the target client groups. This error often seems to stem either from a perceived urgency which demands that the nature and purposes of current environmental conditions be changed, or because such planners are not aware of any other way of approaching the needs-assessment and objectives-formulation processes.

By relating their system-oriented needs and objectives to youth behavior, planners can avoid most of the pitfalls involved in objectives such as: "to provide program (or service) X." Examples of objectives frequently stated this way include: "to provide draft counseling," "to make occupational information available," and "to supply special services to educationally handicapped children." The problem with such objectives is that the evaluation of whether the program or service was provided does not indicate whether it was effective or appropriate for members of the target population. However, if the provision of program or service "X" is keyed to at least one objective stated in terms of the anticipated impact that program or service would have on youth in the target population, then it could be determined whether the desired youth outcomes had occurred during the duration of the program or service.

To be sure, analysis of institutions and services is necessary for the direct intervention components. However, the essential point is that ultimate criteria for evaluating the effectiveness and efficiency of indirect interventions must be established in terms of youth outcome behaviors. Only then can an indirect intervention's appropriateness and impact be adequately determined. If immediate, short-range outcomes are not expected, and therefore, cannot be specified, the assumptions which related the desired long-range outcomes to the indirect interventions must be explicitly stated. In the absence of feedback on immediate effects, these predictions, then, can be judged in terms of available research and expert opinion.

In summary, the needs of the target populations (i.e., youth) preempt the means (including institutional changes) by which young people are assisted to achieve agreed-upon outcomes. Specific system-oriented needs involving the provision or modification of institutions, programs, services, and agencies must be keyed to changes in youth competencies (or at least to the strengthening of their current competencies). It is quite possible that certain institutional conditions influence youth to manifest inadequate or inappropriate behaviors. If this occurs, a decision should be made to correct these conditions so that youth will be able to eliminate undesired responses and to strengthen their desirable competencies. The correction of such conditions will involve indirect interventions such as those of the five components described in the remaining sections of this chapter. If this planning approach is followed, the key concerns for each institutional or service improvement must be: (1) What needs of youth are going to be met by that improvement? What desired outcomes is it going to help youth achieve? (2) How important are these needs when they are compared to other needs each young person has (or groups of similar youth have) in the target population?

Component No. 8--Assessing and Modifying the Educational System and Setting

This component includes the study and possible modification of within-school, system-oriented needs. These needs relate to non-staff aspects of the educational system and its specific settings in order to help arrange optimal conditions for student formulation and pursuit of agreed-upon (i.e., by students, parents, and counseling personnel) goals. Component No. 8 within-school tasks can vividly be labelled as "systems monitoring", "ombudsman-like",

or "youth advocacy" activities for determining whether or not the system and settings are meeting, or capable of adapting to and meeting, student needs and characteristics.

This component's activities involve using the students' viewpoint while conducting and possibly providing assistance to change aspects such as the following: (1) procedures employed to formulate student long-range and immediate goals, including the courses (or even the instructional objectives in individualized instruction contexts) which students will have in their programs of studies; (2) learning methods and materials used in the instructional areas; (3) tests, measurement techniques, and data-reporting procedures employed to help youth and their parents assess and understand student progress toward individualized short and long-term goals; (4) technical support facilities (e.g., computer and data-processing equipment) established to make each of the preceding three aspects operate more efficiently and effectively; and all other environmental factors which comprise each student's milieu at school and, therefore, can influence his learning experiences.

In order to gain an empirical base for the design and implementation of Component No. 8 indirect interventions, data should be collected on specific questions or concerns related to each of the above four aspects of an educational system or setting. Each data-collection question should be posed in an attempt to determine if the system and setting are appropriate, or capable of adapting, to youth needs and characteristics. Appropriate places to begin to seek answers to such questions are the classroom and the counseling office. Appropriate "authorities" are the students themselves, their parents and teachers, and other school personnel who work closely with them. Counseling personnel collecting data in response to such questions do not have to be the only ones attempting to modify any aspects of the educational system or setting which appear to inhibit student progress. In fact, it is probably desirable that they only cooperate in, rather than take leadership responsibility for, the implementation of such changes. Since many of the changes will demand the expertise of persons whose specialities are in non-counseling areas, the necessary leadership should be assumed by them. In addition, if counseling personnel not only conduct the assessment process producing data on possible system or setting concerns, but also attempt to assume responsibility for making modifications to alleviate those concerns, they will confound their counseling roles with an administrative image and will have difficulty gaining school staff cooperation because they will threaten the domains, abilities, and interests of fellow staff members.

Some of the specific questions for which data should be collected are as follows:

What role are students allowed in the formulation of their educational and vocational goals?

To what extent are they trained to engage in such decision making wisely?

Are varied instructional options available so that programs of studies can be individualized to each student's characteristics and needs?

Are attempts made to insure that students possess the entry competencies required for successful learning when they are using available methods and materials?

Do the instructional methods and materials possess sufficient variety and novelty so that they have interest-generating qualities which maintain student attention?

To what extent can test results be related to decision points and options each student and his parents must consider in order to formulate his short and long-range goals and instructional objectives?

Are students and their parents being assisted to understand the results of test and measurement procedures used in the school setting?

Do the data-processing equipment and procedures operate efficiently so that test results are made available for critical moments of student-parent decision making?

Do the computer facilities provide periodic reviews of test information in order to facilitate selection of student goals which will challenge both the accuracy and rate of their performance?

Are there computer-monitoring procedures for the identification of students who are experiencing difficulty in their school performance?

Is the physical layout of instructional and testing areas organized so that students have quick access to necessary materials and resource persons?

Do the environmental conditions of the school permit sufficient freedom to students who have difficulty managing their behavior but at the same time not allow them to interrupt the work activities of others?

Is the noise level conducive to effective study by all students?

Have classroom procedures been established so that students who are unable to manage their own behavior can learn to acquire and demonstrate more managed performance (e.g., procedures which reduce purposeless wandering behavior, which curtail students' lining up at the teacher's desk to ask questions, and which reduce the number of questions which seem to have the intent of receiving teacher approval)?

Are necessary rules of conduct made explicit so that students can discriminate between the behaviors which are desired and those that need to be improved?

If letter-grading procedures have to be used in a school, does each teacher make the assessment procedures and the criterion levels explicit?

Do teachers individualize and personalize their attention and contact with their students?

Project staff members visited a number of schools and used a variety of approaches to collect data on most of the questions listed above. For example, case studies were conducted with students who were identified as either progressing well academically or having difficulty maintaining a level of attainment appropriate to their skills. The purpose of these studies was to help the students and key school personnel to speculate about the factors which seemed to be influencing student progress, or lack of it. As a result of this approach, environmental conditions such as the following were highlighted often as critical factors of concern: ambiguities in teacher-established grading practices, lack of explicit statements of school and classroom rules for student conduct and the rationale on which they were based, distracting classroom noise levels, and inavailability of meaningful interpretations of student data collected through school testing programs. Similarly, observational checklists were developed so that counseling personnel (i.e., any counselors, administrators, teachers, etc., attempting to explore school conditions from the student's viewpoint and functioning in counseling interactions with students) would be able to assess parts of classrooms, counseling areas, and the total school plant which might inhibit student progress toward their short and long-term career goals. Interviews with both individuals and groups of students were used as the third technique for collecting data responses to some of the systems monitoring questions listed earlier.

An Illustration of a Component No. 8 Activity

There are many areas of educational changes for which well-trained counseling personnel should be able to provide leadership if they have a background in the behavioral sciences. An excellent example of this type of change is provided by one area of research and development activities conducted in conjunction with the project described throughout this document. This example will be described in order to illustrate how counseling personnel might be the appropriate school staff members to take a leadership role in the modification of educational conditions.

This example area is frequently labelled as behavioral engineering--the application of the results of learning theory and research to the solution of human problems. One youth problem prevalent in educational settings is that of the lack of motivation for academic and social performance. A category of solutions which has been proposed as a possible way to resolve this problem requires an indirect intervention in the form of the manipulation of school conditions so that various groups of school personnel, students, or parents receive a direct intervention, such as incentives, contingent upon improvements in the quality and quantity of student academic effort or social responses.

Incentives are identifiable consequences of behavior which shape the form and frequency of subsequent responses. A wide range of incentives has been found effective when used to continually reinforce small gains in student academic performance if instructional activities are clearly sequenced and measurable criteria for student success are prespecified. Two classes of incentives have been employed: one involves things one person does or gives to another person; the other involves things a person does for himself or in

which he engages. Examples of the first category of incentives include: materials (e.g., food and toys), social approval (e.g., praise), knowledge or feedback regarding the results of prior performance, aversive or noxious statements (e.g., blame, disapproval, and other types of punishment), and tokens (e.g., money, points, stars) which can be exchanged for extrinsic rewards. Two examples of the second incentives category include the use of self-selected goals and rewards and the scheduling of highly preferred activities so that they reinforce less preferred responses performed earlier.

When incentives such as these are used to modify the consequences of behavioral outcomes, indirect interventions in the form of changes in learning methods, materials, and conditions used in school settings invariably are necessary because factors conducive to the systematic use and evaluation of incentive systems are not usually available in conventional instructional settings. Counseling personnel who have training and experience in the application of behavior technology can be instrumental in Component No. 8-type indirect interventions involving assessment of when such changes would be desirable and assistance to design and implement the changes. As should be the case with all indirect interventions employed in this CCGS component, the desired outcomes of these changes should be prespecified in terms of their anticipated impact on the knowledge, attitudes, or other overt responses of youth. This is increasingly necessary if incentives are provided to school personnel or parents, rather than to students.

District and school counseling personnel and the staff of this project worked closely with seventh-grade mathematics teachers at Juan Cabrillo Intermediate School in Santa Clara, California in an attempt to increase student academic motivation (as indicated by inventoried attitudes and performance on mathematics achievement tests) by applying the contingency management technique. This technique involves the second category of incentives noted above because activities preferred by youth are made immediately and directly contingent upon these young persons' exhibition of agreed-upon desired behaviors. All persons conducting this study redesigned the seventh-grade mathematics curriculum to convert it into a quasi-individualized instructional program involving learning units and correlated tests for assessing student achievement of instructional objectives in each unit. This change was made so that each student could proceed through his ability-appropriate materials at his own rate and with minimal intervention from his teacher. Further modifications in the school setting were employed in order to coordinate an innovative student incentives approach with the instructional system changes. An "activity area", established in a portable trailer, was equipped for a wide variety of student-selected reinforcing activities (e.g., listening to hi-fi; playing games such as electric football, chess, or checkers; watching television; reading current magazines of interest; building models; and working on a variety of hobbies and crafts). A male "consultant" was available in the trailer to talk with students, to help them implement their activities, and to assist them in spending only the earned amount of time there. Students earned access to the activity area by accumulating pre-specified amounts of time for successfully completing designated academic behaviors. For example, the completion of one instructional objective was worth 5 minutes, chapter test results indicating an achievement level between 90 per cent or 100 per cent of the items were rewarded by 30 minutes, while a test previously not passed, but subsequently retaken and passed, earned 5 minutes.

The results of this study did not provide overwhelming support for the use of contingency management by itself, independent of the type of instructional setting in which it was employed. However, there were clearcut data trends and significant F-ratios which favored the combination of contingency management and individualized instruction over conventional instruction, and data trends which indicated that students performed at higher quantitative and qualitative academic levels when they were exposed to contingency management than they did when they were not using the activity area. These data suggest that both contingency management and individualized instruction can have relevance for students' academic motivational problems, at least in school populations similar to that from which this study's subjects were selected.

As for the question of the feasibility of actually implementing this type of change in educational system and setting conditions, no major barriers were highlighted by this study. While many school administrators' initial reaction to this contingency management approach might be negative due to both their wish to avoid parental criticism that the approach might involve procedures which are too permissive, these initial negative reactions can be changed by careful orientation discussions. This example does suggest that trained counseling personnel functioning as ombudsmen for assessing and resolving system-oriented needs within the context of Component No. 8 can be instrumental in relating these needs to youth outcomes and changing educational conditions so that students can be assisted to progress toward their personal development goals.

Component No. 9--Assessing and Modifying Counseling Personnel

Like the preceding component, this second of the CCGS indirect intervention components also focuses on within-school system-oriented needs. However, whereas Component No. 8 emphasized all non-staff needs occurring in educational systems and specific school settings, Component No. 9 attends to the needs not only of guidance and counseling staff but of all school personnel (e.g., teachers, administrators, school psychologists, and paraprofessionals) who interact with or for students in any type of a counseling relationship intended to facilitate student planning, decision-making, and personal management. As was previously noted a number of times, system needs such as the ones upon which this component is designed must be linked to short-term, or at least to long-term, youth outcomes. Attempts should be made both to identify the impact which shcool personnel characteristics and actions have on the developmental processes of the youth with whom they interact and to evaluate this impact in terms of the degree to which youth benefit from such interaction.

This component necessitates a careful delineation of the competencies counseling personnel need in order to interact efficiently and effectively in CCGS programs in contexts where individualized education is being attempted. Competencies necessary for successful implementation of activities such as the following must be determined:

1. serving as resource persons for student information gathering and processing experiences and for student decision making in areas such as educational and vocational choice.

2. enabling students to identify their short- and long-range goals and to select and understand their appropriate programs of study.

3. helping to monitor the academic progress of students in instructional programs and classes and identifying students having progress problems as well as ones needing intermittent progress reinforcement.

4. monitoring factors in educational systems and settings in order to determine the nature and degree of their contribution to student continuous progress toward instructional objectives and personal goals.

5. accurately observing student behavior and acting as (or facilitating other people to serve as) reinforcing agents or behavior models in order to help students produce, encourage, or maintain desirable behaviors and improve undesirable behaviors.

6. assisting students, who need specific types of planning and management help, to select appropriate planning strategies which will facilitate their learning as well as their personal and social development.

7. conducting group counseling experiences by serving as planning strategists, reinforcing agents, and behavior models in group activities involving concepts of reinforcement and modelling derived from learning theory principles. In these group sessions, promoting cohesiveness so that group members will become concerned about each other's progress and will suggest alternate planning strategies, reinforce each other's progress, and present desirable models for observational learning just as easily (and perhaps with greater behavior modification impact because of peer social influence) as will adult counseling personnel.

Obviously, the specification of competencies such as those implied in the example activities listed above should shape the development of objectives and procedures for both the selection and pre-service and in-service training of these personnel. Too many pre-service training programs are tailored to conventional, non-individualized, instructional settings and do not recognize the different skills which school staff need in order to function successfully in systems of individualized education which attempt to individualize guidance and counseling. In systems of individualized instruction, many of the traditional roles of counseling personnel, such as a teacher or counselor, are managed by technological supports or by the organization of the system itself. The teacher-student or counselor-student activities relating to materials, organization, or clerical activities can be significantly reduced in this type of individualization. For example, so many time-consuming details are automated through computer facilities and as guidance learning units are developed to contain much of the guidance information counselors traditionally have had to dispense, counselors have more time available for engaging in actual counseling functions as defined in this document.

Within such a context, those activities involving student-adult interaction in a problem-solving situation receive heightened importance. Some of the interactions relate to the basic curriculum needs of students and some (e.g., those activities listed above) to guidance and counseling needs. For this reason the roles of the school personnel need to be redefined to be more appropriate to this new individualized system. It is suggested that the redefinition be in terms of the new adult-student interactions needed to assist

each student to formulate and to meet his individual goals. Much emphasis has already been placed upon training professionals for basic curriculum-oriented interactions; little attention has been focused on training them for CCGS-type counseling activities (i.e., helping students with personal planning, decision making, and management). It is necessary, then, to identify the type of CCGS-oriented interactions needed and to develop and test a training program for such counseling activities. This program would be coordinated with a program for training professionals for curriculum interactions. The determination as to whom would be trained for the different interactions identified as necessary in an individualized setting would be a function of the nature of both the interaction and the personnel available. This means that the interactions would be identified and people trained accordingly rather than assigning interactions to pre-existing positions.

Because of their daily direct contacts with students, counseling personnel can be trained to be powerful agents for promoting youth development. For example, it might be assessed that a teacher's attentive responses are reinforcing a student's disruptive or antisocial behaviors, rather than more desirable academic or prosocial actions. In another instance, a staff member might be observed to be modeling a behavior exactly opposite to those which he desires to help his students learn and perform. If such school personnel receive both feedback on the undesirable effects produced by their actions and training assistance to change the responses they emit and the consequences of their actions, important Component No. 9 indirect interventions will have been implemented.

For the CCGS programs developed in the project summarized in this document, emphasis has been on in-service training of counseling personnel directly involved in implementing these programs with youth. The training process necessitated production of: (1) general guides and teacher-counselor administrative manuals for CCGS programs (e.g., for the Personal and Social Development at the intermediate level as described in Chapter IX; for the Program for Effective Personal Problem Solving at the secondary level as outlined in Chapter VII; and for Group Counseling--Learning Behaviors at intermediate and secondary levels as noted in Chapter IX); and (2) teacher-counselor supplements for specific CCGS guidance learning units (e.g., for all units described in the personal assessment, personal choice opportunities, and personal goal formulation areas of the educational-vocational programs summarized in Chapters V, VI, and VII). These training materials have been employed informally either: (1) in training workshops during which they served as the basic references for discussions with school personnel who later were going to counsel students in CCGS programs and units; or (2) in individual consultations in which the prospective counseling person worked through supplements and other resource materials pertinent to the programs with which they would be connected and consulted with project staff members or school and district administrators.

In none of these contexts was a formally structured, carefully evaluated, training program used. Extensive efforts are needed to improve all training activities related to both the basic assumptions and explicit rationale of the CCGS as well as its guidance and counseling programs and units. A comprehensive training program for counseling personnel should include three parts:

1. Understanding of all aspects and components of the CCGS so that the trainees will understand the guidance and counseling needs of students and be able to perform their roles in helping students meet these needs.

2. Training on communication skills--focus would be on the dimensions of empathy, respect, genuineness or congruence, and concreteness or specificity of expression--to enable trainees to function effectively in interpersonal relationships.

3. Training on specific techniques to be used once an effective interpersonal relationship has been established by providing high levels of the dimensions noted in part #2 above. Communication skills provide the necessary atmosphere and framework within which counseling personnel can more effectively interact with students. Besides being able to relate effectively in interpersonal relationships, counseling personnel must be able to use specific techniques appropriately. Some of these techniques would be ones derived from operant and classical conditioning principles of learning, and often classified under the heading "behavioral counseling." Included here would be training in the use of verbal and non-verbal reinforcement, shaping procedures, behavior rehearsal, and role modeling. Behavioral counseling postulates that human problems are learned and that the best way to resolve them is through the application of learning principles. With this approach to counseling, a student and a counseling person use a problem-solving strategy to identify the problem, gather relevant information, specify response alternatives which may lead to problem resolution, and speculate about consequences inherent in each suggested alternative. The student then has responsibilities of selecting what he thinks is the most appropriate response alternative and trying it out. As in all experimentation, there is a possibility that the chosen alternative may not resolve his problem. Further adaptation and implementation may be necessary. In this relationship, it is the counseling person's responsibility to set up conditions necessary for making the counseling setting a learning situation. Such conditons should facilitate a student's checking his perceptions, exploring new ways of responding, and rehearsing new responses. Objectives of such counseling must be stated in behavioral terms and must vary from student to student, just as students' problems and experiences vary.

Examples of necessary improvements in training methods and materials employed in this project include: clearer specification of training objectives; development, field testing, and revision of more training material and method alternatives than those which are currently available; and evaluation of the efficiency and effectiveness of the training resources and activities. Individualized training packages are needed for CCGS counseling personnel. These would be similar to those the Westinghouse Learning Corporation has developed and evaluated for teacher and administrator training in Project PLAN, Westinghouse's individualized educational system for elementary and secondary students.

Component No. 10--Assessing and Modifying Home and Neighborhood Factors

Component No. 10 is the first of two CCGS indirect intervention components which are designed to assess conditions and resolve non-youth-oriented needs which occur outside of educational systems or the school settings in which such systems function. These components stress conditions and needs which have, or can have, a significant impact on youth developmental aspects which occur in educational contexts. Because of the strong interaction effects between external (i.e., non-school) factors and youth development, these beyond-school factors cannot be ignored. However, their identification and consideration must be related closely to, and be shaped by, youth developmental needs and outcomes. Assessment of the nature and extent to which beyond-school factors facilitate or retard the developmental processes of youth is an important part of behavioral-situational analyses introduced on page 30 of Chapter III. Through this approach, attempts are made to identify situational conditions which elicit or maintain both desirable and undesirable youth behaviors. If these behaviors operationalize youth entry-level or terminal competencies related to the objectives of CCGS programs and if youth progress is going to be facilitated, changes in such situational conditions or factors might have to be either (1) attempted by school personnel, or (2) recommended to more appropriate community resources.

Situational conditions of concern in Component No. 10 are the home and neighborhood environments, whereas Component No. 11 concentrates on more general community variables outside these two spheres of influence. The general nature of Component No. 10 is to provide human and technical resources so that: (1) communication is maintained with parents, guardians, and representatives from the immediate neighborhoods in which students live; and (2) learning activities are developed for, or conducted by, them, if appropriate. As in all other components, the general goal of Component No. 10 is to facilitate each student's goal-formulation and goal directed activities.

Component No. 10 received little attention during the project summarized in this document. No attempt was made to develop assessment procedures for either determining students' perceptions of the impact of home and neighborhood conditions on their lives, or actually investigating such conditions and collecting data from persons in these settings. Future research and developmental activities focusing on this component's assessment element will have to be preceded by a clear delineation of the role and responsibilities school personnel in general, and counseling personnel in specific, should have in this area. There seem to be large variations among local school groups' resolution of this topic. For example, many local authorities believe that anything beyond school personnel's cursory interest and efforts in assessing home and neighborhood variables is beyond the sphere of school responsibilities and should be turned over to public and private community-based service agencies. At the same time, other educators have concluded that school personnel cannot help but become intimately involved in both assessment and active intervention activities.

Although project staff did not devote extensive time and effort to producing changes in home and neighborhood personnel conditions, it was decided that the involvement of parents and guardians in some of the CCGS guidance learning experiences in which their children were participating was necessary in order to insure the effectiveness of such experiences. Three main areas of involvement were attempted. First, attempts were made to familiarize

[illegible] parents with many of the same individualized educational concepts and [illegible] to which students were exposed in the orientation-in instructional-[illegible] units described in Chapter IV. Second, in the educational-vocational [illegible] units on personal assessment as discussed in Chapter V and personal [illegible] as outlined in Chapter VI, parents and guardians were asked [illegible] participate in instructional-counseling and evaluational activities. For example, students were requested to review their personal assessment data with their parents or guardians and to obtain assistance in order to complete summary [illegible] of their personal characteristics. Later, these adults received check [illegible] while getting students to explain their personal data summaries, where and how they gathered personal data, and what tentative conclusions they made on the basis of these data. Third, students were encouraged to discuss with their parents or guardians the behavior assessment and modification activities and goals involved in the Personal and Social Development Program summarized in Chapter IV.

There are definite needs for extensive research and development in all aspects of Component No. 10 including areas such as those summarized in the preceding paragraph. As noted earlier, such efforts in each school district will have to follow specification of the exact responsibilities school and counseling personnel can assume in regard to home and neighborhood conditions. A preliminary step in achieving this type of resolution must be an assessment of all system-oriented needs related to this CCGS component and appropriate to each school's local conditions. However, this needs assessment should not be conducted only by school personnel. Student, home, and neighborhood representatives should be involved as should staff from public and private social service agencies other than the school in order to insure as valid and reliable an assessment process as will be possible. Example needs which this project's staff speculate will receive priority ranking in many school districts include the need:

1. to obtain more parent and guardian assistance in the design, implementation, and evaluation of both student and parent-guardian guidance and counseling programs.

2. for improved school-home communication patterns (e.g., teacher-parent, student-parent-counselor conferences) and technology so that parents and guardians will be able to better understand and facilitate their students' progress in CCGS developmental and prescriptive learning experiences as well as in basic academic areas.

3. for more opportunites for parent and guardian involvement in programs which will enable them to improve their skills in child training practices, including the use of behavior assessment and modification techniques as applied to their own responses and those of their children. (A correlated need here involves more extensive summative evaluation of the impact such programs as the following have on adult attitudes, knowledge, and overt responses: the "Parent Effectiveness Training" program developed by Dr. Thomas Gordon, and the behavior modification materials and methods produced by Dr. Gerald Patterson of the University of Oregon--e.g., the Patterson and Gullion 1968 publication "Living with Children: New Methods for Parents and Teachers").

4. for improved identification of, and possible changes in, significant neighborhood conditions (including peer and gang influence) which shape youth developmental patterns.

A prerequisite for the successful completion of all future research and development activities on Component No. 10, including needs assessment tasks, is the identification of youth outcomes which will be affected if needs such as those listed on the previous page are resolved.

Component No. 11--Assessing and Modifying Community Resources

In this component, the second beyond-school category of CCGS indirect interventions, attention is directed outside the immediate impact environmental conditions in each student's family and neighborhood have upon his development. The focus of Component No. 11 is on all other non-school conditions of students' surroundings and, as in Component No. 10, efforts are made to determine the influence these conditions have, and can be aided to have, on youth development. This component's general purpose is to facilitate communication between school and community representatives (e.g., public and private health, welfare, and employment agencies; government labor bureaus; education and training institutions; businesses and industries; labor and professional organizations) in order to: (1) provide resources which can be used on the basis of students' individualized needs so that students will be assisted to formulate and progress toward their career goals, and (2) keep students and school personnel apprised of needs and conditions currently existing in the community.

Although Component No. 11 received minimal concern during the project summarized in this document, it represents an area of heavy concentration for many guidance and counseling groups in recent years. At least three types of school-community interactions have been investigated. The most typical type involves school-community information dissemination interactions which attempt both to make current data on community opportunities available for critical moments of student career decision making and to enable community resources to publish data on their current needs and conditions. Some of the most innovative interaction techniques of this type are those recently developed for providing students with job opportunity information. Some of the more impressive job bank procedures briefly described in Chapter VI were initiated by the federal government; the Santa Clara County Office of Education in California; and a private organization, Interactive Learning Systems. Other techniques have been developed in order to disseminate information on opportunities available to youth who need specialized help such as: draft counseling, legal aid, college and training school exploration, financial assistance, mental health resources, drug abuse counseling, and sex problem advice and treatment.

The second type of school-community interaction goes beyond the provision of information. It is represented by an active referral system which attempts to link youth with appropriate community resources, to implement follow-up studies in order to evaluate the success of such student-community contacts, and to coordinate additional contacts if these are desirable. The most salient example of this intervention is the mental health referral where a recommendation is made that a youth and/or his family receive professional treatment from public or private personnel other than school district staff. However, exciting advances also have been made in using community resources and personnel for other purposes. For example, businesses, industries, professional and labor organizations, private individuals, and universities and colleges have cooperated to give students opportunities to explore occupational and educational settings in real life, and even to develop and receive assistance in carrying out special

projects and research which will help them make career decisions and meet their short-term goals. The third category of Component No. 11 school-community interventions is the most assertive educational approach of all three types of interactions because it involves decisive attempts on the part of school personnel, and perhaps students or parents, to produce changes in community resources in order to make them more responsive and appropriate to youth needs. One example of this approach involves efforts to get business and industrial leaders to identify the performance criteria which high school graduates must satisfy in order to qualify for job openings. Also involved here can be attitude change programs aimed at getting such leaders to make their ability criteria more appropriate to their job task requirements and their personal characteristic criteria (e.g., applicant's ethnic group membership) more acceptable to social convictions and legal constraints.

All three of the above types of Component No. 11 indirect interventions need to receive continued research and development investigation. Innovative but effective strategies must be selected for efficiently coordinating these interventions with, and integrating them into, school-based guidance and counseling programs. In addition, student-parent-counseling personnel teams need to explore successful ways of helping community services and institutions to adapt to continual changes in youth needs and characteristics as well as in conditions which influence the existence of these needs. As a key part of all these continued activities, consistent efforts must be made to specify the desired youth-related benefits of these interventions and to evaluate their impact accordingly.

Component No. 12--Research and Evaluation

Even though research and evaluation concepts and activities have been stressed in each of the CCGS components described in preceding chapters, these two important aspects of guidance and counseling program development are identified here as a separate component in order to highlight not only their existence but also their important role in insuring that educational programs become increasingly effective and efficient in meeting youth guidance needs. For a more complete understanding of evaluation and research topics, the reader should consult:(1) Chapter III (cf. pages 42-46) which presented ideas underlying this project's approach to program and strategy evaluation, feedback, and correction; and (2) the part of each chapter which outlined evaluation instruments, criteria, and procedures which had been explored (in some cases, through evaluative research studies) relevant to each component and which suggested improvements possible through future research activities.

All of this document's preceding discussion of evaluation and research attempted to consistently explicate an integrated evaluation model including at least two major concepts. The first concept stresses the importance of both formative and summative evaluation. The second concept demands that evaluation not be an isolated activity but an integral element of a comprehensive planning approach focusing on the needs of at least one human target population. These two concepts will be discussed further here even though it is hoped that by this point the reader who has closely reviewed preceding chapters needs little additional clarification of the concepts.

Evaluation design and procedures basic to the CCGS approach to youth programs are conceptualized as having the purposes of providing reliable and timely data for making decisions on overall guidance and counseling program worth (i.e., "summative" evaluation) and for making continuous improvements in program design and methods while a program is being implemented (i.e., "formative" evaluation). In order to be of use for decision making in the areas of summative and formative evaluation, program data must be well related to the behavior of target population members, collected accurately, and presented in easily interpretable forms in order to be fully utilized by decision makers. Activities such as the following are required to implement this concept of evaluation: (1) formulating youth program objectives in terms of the active needs of persons who will be the recipients of the program; (2) stating these objectives in measurable terms such that information can be collected regarding their attainment; (3) developing relevant and practical measures (criteria) and instruments of program impact defined in terms of changes in the behavior of members of the target population; (4) setting up mechanisms whereby information about planned and unplanned program effects can be gathered accurately, reliably, validly, and efficiently; and (5) communicating this information in an understandable way at a time which coincides with important decisions program recipients and leaders must make.

The concept of evaluation outlined in the preceding paragraph must not be operationalized as an independent activity after programs have been designed and implemented. As a vital element in a comprehensive planning process, it must be seriously considered beginning with the preliminary phase of the total planning process which includes groups of designing, implementing, evaluating, and revising activities. Only in that way will evaluation perform its important role in the cybernetic process of program development noted earlier in Chapter III. As that role and the total process are implemented, programs will be adapted to the changing characteristics and needs of youth. This document presents the application of this comprehensive planning approach to guidance and counseling programs. Therefore, as was illustrated by the list of five planning activities which both were listed on page 21 of Chapter III and were used as the organizational scheme for Chapters IV and X, the target populations which received attention here were youth and their parents and guardians. In other words, the comprehensive planning approach has been applied to action programs for assisting youth development. Other than brief statements related to Component No. 8 presented earlier in this chapter, little discussion has been devoted to the application of the planning approach to a different target population--the administrators responsible for planning these programs. Future research must consider this topic as one of the priority areas of concern. Later research and development activities should concentrate on the needs and characteristics of program planners and provide answers to questions such as: How do they organize themselves for comprehensively planning youth development programs? What administrative structure and budgetary procedures are necessary to initiate and operate these programs? How successful was their planning?

In the past, research and evaluation activities in the area of school guidance and counseling have depended heavily on descriptive surveys and checklists of services as well as on subjective reactions of program consumers (e.g., students and parents) and staff (e.g., counselors, teachers, and administrators) in order to identify and use evaluative criteria. When outcome measures have been used, they have focused primarily on effects of questionable relevance to program objectives, which in turn have been vaguely stated. The usefulness of

consumer and staff responses to questions related to criteria such as the following is not denied: the programs are supervised by a chief administrator or someone chosen by him; assignment of counselors is based on counselor characteristics which promote effective relationships with students, parents, and staff; guidance-related objectives are clearly understood by all staff; and a small-group meeting room is part of the school's guidance area. In addition, students and staff subjective reactions to overall programs and elements of programs provide conclusions and suggestions which can be used in the formative evaluation process as programs and strategies are refined. This possibility is illustrated by the data summarized in Attachment B currently being used in an attempt to improve the CCGS Personal and Social Development Program. However, it is a matter of the degree of importance given to such data. The central thrust of the CCGS rationale is that maximum attention must be given to a long-neglected aspect of evaluation--program consumer outcomes, primarily youth knowledge, attitudinal, and non-test behavioral outcomes. Consumer or staff satisfaction is irrelevant if program outcomes in the form of youth development effects are not manifested and measurable.

In order to use youth development outcomes informative or summative evaluation studies attempted in natural settings or in settings where steps are taken to control natural conditions systematically (as in experimental investigations using before-and-after comparisons to evaluate the effectiveness and efficiency of alternate treatment strategies which have similar objectives--cf. Assumption 6 on page 19) the anticipated aspects of program impact on youth first must be clearly stated in the form of measurable objectives. Also, these objectives must be derived from individual needs of program recipients and must specify criteria which will enable decisions to be made concerning youth achievement, or lack of achievement, of objectives. To attain this type of objectives-based evaluation and research, school personnel, students, and parents will have to cooperate in ways that have not previously been attained in most school settings. Program objectives will have to be: (1) formulated on the basis of an explicit rationale, and hopefully, some reputable empirical data; (2) stated in written form; (3) communicated to all relevant persons; (4) accepted and actively supported; and (5) periodically assessed and modified accordingly, if necessary. In addition, counseling personnel will have to have a behavioral and experimental orientation which both aims at modifying materials and procedures to successively approximate these predetermined objectives and does not ignore unanticipated program outcomes or the processes producing those effects [see Messick's (1970) list of non-outcome specific concerns listed on pages 45 and 46].

In Chapters IV through XI and the preceding paragraphs of this section, many references have been made to research and development activities which should be conducted. The two suggestions previously noted or implied in this section represent two critical areas which need attention. These include the application of the comprehensive planning process to the administrative functions necessary for the operation of guidance and counseling programs, and improvements in the methodology of objectives-based evaluation of these programs. The following activities are ones the authors of this document recognize as priority research topics which must be added to the above two items. These suggestions provide a fitting conclusion to the discussion of an approach to individualizing guidance by using a cyclical planning model which requires that feedback procedures be maintained and consistent advances be made in order to improve and extend the CCGS rationale and programs. Research activities directly related to students must attempt to improve: needs assessment procedures (including follow-up studies); experience and prediction tables related to youth abilities, interests, and values; academic, personal, and social development monitoring procedures to help youth (and their parents) understand their

development progress and to alert appropriate counseling personnel to students experiencing developmental problems; and longitudinal studies of the impact which individualized guidance and counseling programs have on youth long-range goals and development. Research on guidance-related aspects of educational systems must focus on: training counseling personnel for involvement in CCGS activities; the design and evaluation of many more indirect intervention procedures; feasibility and comparative studies of comprehensive planning approaches which relate to, and contrast with, the planning model recommended in this document; and greater, but more economical, use of guidance computer technology than is illustrated by the applications summarized throughout this report.

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ATTACHMENT B

SUMMARY REACTIONS TO THE PERSONAL AND SOCIAL DEVELOPMENT PROGRAM

TABLE 22

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PROJECT PLAN STUDENT REACTIONS TO THE PSDP ORIENTATION ACTIVITIES - INTERMEDIATE LEVEL

SECTION I - What do you think and feel about the orientation activities for the Personal and Social Development Program?

1. The first orientation booklet, "Part I - Managing Your Behavior," was

	ALTERNATIVE									
	excellent - easy to read and to understand; not confusing at all.		good - I had a little trouble reading and understanding it; it was a little confusing.		fair - I didn't find it easy or difficult; or impossible or confusing to read and understand.		poor - difficult to read and to understand; I was quite confused.		horrible - impossible to read and to understand; very confusing material.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	93	40	75	33	47	20	3	1	13	6

2. The second orientation booklet, "Part II - Personal Problem Solving," was

	ALTERNATIVE									
	excellent easy to read and to understand; not confusing at all.		good - I had a little trouble reading and understanding it; it was a little confusing.		fair - I didn't find it easy or difficult; or impossible or confusing to read and understand.		poor - difficult to read and to understand; I was quite confused.		horrible - impossible to read and to understand; very confusing material.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	74	31	100	41	56	23	2	1	10	4

3. The first orientation booklet and its activities were

	ALTERNATIVE									
	very interesting.		quite interesting but I could have been more interested.		neither interesting nor boring.		a little boring.		very boring; I was not interested at all.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	73	30	78	33	40	17	27	11	22	9

4. The second orientation booklet and its activities were

	ALTERNATIVE									
	very interesting.		quite interesting but I could have been more interested.		neither interesting nor boring.		a little boring.		very boring; I was not interested at all.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	77	32	69	28	40	16	32	13	26	11

5. The orientation booklets anc activities have

	ALTERNATIVE			
	helped me understand my own behavior and that of other people.		not helped me understand my own behavior and that of other people.	
	N	%	N	%
PLAN Students	171	81	39	19

TABLE 22

(Page 2 of 4)

SECTION II - What do you remember and understand from the orientation activities in the Personal and Social Development Program? (Correct responses are indicated by asterisks.)

1. Having a "personal problem" means that a student

	ALTERNATIVE							
	has something negative he wants to change.		is told to "improve" a certain behavior.		wants to "encourage" one of his social behaviors.		has picked out a goal he wants to work toward. *	
	N	%	N	%	N	%	N	%
PLAN Students	122	50	28	12	35	15	54	23

2. "Social behavior" involves the things a person does when he or she is

	ALTERNATIVE			
	with another person. *		working on a task by himself or by herself.	
	N	%	N	%
PLAN Students	217	90	25	10

3. The "Personal and Social Development Program" attempts to help

	ALTERNATIVE							
	student learn how to act and to get them to act in ways school people want.		teachers learn ways they can change students' behaviors.		students make any changes in their behavior that they and their teachers agree upon. *		students and parents improve students' body growth and physical appearance.	
	N	%	N	%	N	%	N	%
PLAN Students	109	47	22	9	102	43	5	1

12. List below any ways you think the first orientation booklet, "Part I - Managing Your Behavior," and its activities might be improved.

	No improvements needed.		Unconstructive negative comments.		Constructive suggestions.	
	N	%	N	%	N	%
PLAN Students	67	43	43	27	48	30

13. List below any ways you think the second orientation booklet, "Part II - Personal Problem Solving," and its activities might be improved.

	No improvements needed.		Unconstructive negative comments.		Constructive suggestions.	
	N	%	N	%	N	%
PLAN Students	82	52	25	16	49	32

14. List below any parts of the orientation booklets or activities which you couldn't understand, which were difficult to read, or which weren't very interesting or helpful.

	All was good.		All was bad.		Specific parts needed improving.	
	N	%	N	%	N	%
PLAN Students	71	56	21	16	36	28

TABLE 22

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6. The orientation booklets and activities have

	ALTERNATIVE			
	not interested me in trying to manage and change my behavior to get better results from my actions.		interested me in trying to manage and change my behavior to get better results from my actions.	
	N	%	N	%
PLAN Students	65	27	179	73

7. The problem-solving skills I learned about in the second orientation booklet probably will

	ALTERNATIVE			
	help me solve some of the personal problems I face in the future.		not help me solve some of the personal problems I face in the future.	
	N	%	N	%
PLAN Students	181	76	57	24

8. One or more of my personal or social behaviors have

	ALTERNATIVE					
	improved because I began working on this Personal and Social Development Program.		not changed because I began working on this Personal and Social Development Program. The program has not influenced the way I now act.		produced less desirable results for myself or others because I began working on this Personal and Social Development Program.	
	N	%	N	%	N	%
PLAN Students	132	55	93	39	16	6

9. In STEP 4 (the last step) of the second orientation booklet, I decided

	ALTERNATIVE							
	not to work on any more booklets in this Personal and Social Development Program.		to work on at least one of the specific booklets which try to help students encourage their behaviors.		to work on at least one of the specific booklets which try to help students improve their behaviors.		to work on at least one encourage and one improve booklet.	
	N	%	N	%	N	%	N	%
PLAN Students	76	32	66	28	36	15	58	25

10. I think that other fifth and sixth grade students at my school should

	ALTERNATIVE					
	take these orientation activities--everybody can profit from them.		take these orientation activities only if they want and need them.		not take these orientation activities--they won't help students at all.	
	N	%	N	%	N	%
PLAN Students	93	39	139	58	9	3

11. I think that the Personal and Social Development Program, at least from what I know about it, should

	ALTERNATIVE			
	be included in all Project PLAN classes each school year.		not be included in all Project PLAN classes each school year.	
	N	%	N	%
PLAN Students	146	64	82	36

TABLE 22

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4. A student who usually is told what to do and when to do it

	ALTERNATIVE			
	is not managing his own behavior. *		is managing his own behavior.	
	N	%	N	%
PLAN Students	220	92	20	8

5. To "manage" your behavior successfully means

	ALTERNATIVE							
	to control your actions so that you get the immediate results you want for yourself.		to try to do something which is impossible.		to control your actions so that you get the results you want both for yourself and for others around you.*		to think of what you're doing and not to be concerned with the results of what you do.	
	N	%	N	%	N	%	N	%
PLAN Students	121	49	7	1	118	48	1	0

6. A plan for a personal problem is

	ALTERNATIVE							
	an outline describing what the problem is.		an alternative solution to that problem.		an outline of what must be done to solve that problem. *		a schedule of dates on which a student will evaluate whether or not his problem has been solved.	
	N	%	N	%	N	%	N	%
PLAN Students	38	16	78	32	86	36	39	16

7. To "improve" a behavior means

	ALTERNATIVE							
	to change a behavior which has led to undesirable results. *		to learn a behavior which has undesirable results.		to change a behavior which has led to desirable results.		to perform more often a behavior which has led to undesirable results.	
	N	%	N	%	N	%	N	%
PLAN Students	127	53	11	5	80	34	20	8

8. Write below five problem-solving skills which might help you make any changes you desire in your personal and social behavior.

	Identifying and defining the problem.		Assessing the problem.		Considering alternative solutions to the problem.		Choosing a best and a second best plan to solve the problem. Working out details of the best plan.		Trying out the best plan, evaluating and making any needed changes.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	63	20	60	19	65	22	62	20	60	19

TABLE 23

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REACTIONS OF NINE PROJECT PLAN TEACHERS TO THE PSDP ORIENTATION ACTIVITIES - INTERMEDIATE LEVEL

SECTION I - What do you think and feel about the orientation activities for the Personal and Social Development Program?

1. The first orientation booklet, "Part I - Managing Your Behavior," was

	ALTERNATIVE				
	excellent - easy to read and to understand; not confusing at all.	good - I had a little trouble reading and understand it; it was a little confusing.	fair - I didn't find it easy or difficult; or impossible or confusing to read and understand.	poor - difficult to read and to understand; I was quite confused.	horrible - impossible to read and to understand; very confusing material.
	N	N	N	N	N
PLAN Teachers	1	8	0	0	0

2. The second orientation booklet, "Part II - Personal Problem Solving," was

	ALTERNATIVE				
	excellent - easy to read and to understand; not confusing at all.	good - I had a little trouble reading and understand it; it was a little confusing.	fair - I didn't find it easy or difficult; or impossible or confusing to read and understand.	poor - difficult to read and to understand; I was quite confused.	horrible - impossible to read and to understand; very confusing material.
	N	N	N	N	N
PLAN Teachers	0	4	4	1	0

3. The first orientation booklet and its activities were

	ALTERNATIVE				
	very interesting.	quite interesting but I could have been more interested.	neither interesting nor boring.	a little boring.	very boring; I was not interested at all.
	N	N	N	N	N
PLAN Teachers	6	2	1	0	0

4. The second orientation booklet and its activities were

	ALTERNATIVE				
	very interesting.	quite interesting but I could have been more interested.	neither interesting nor boring.	a little boring.	very boring; I was not interested at all.
	N	N	N	N	N
PLAN Teachers	0	6	1	2	0

5. The orientation booklets and activities have

	ALTERNATIVE	
	helped them understand their own behavior and that of other people.	not helped them understand their own behavior and that of other people.
	N	N
PLAN Teachers	5	2

TABLE 23

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6. The orientation booklets and activities have

	ALTERNATIVE	
	not interested them in trying to manage and change their behavior to get better results from their actions.	interested them in trying to manage and change their behavior to get better results from their actions.
	N	N
PLAN Teachers	2	7

7. The problem-solving skills they learned about in the second orientation booklet probably will

	ALTERNATIVE	
	help them solve some of the personal problems they face in the future.	not help them solve some of the personal problems they face in the future.
	N	N
PLAN Teachers	8	0

8. One or more of their personal and social behaviors have

	ALTERNATIVE		
	improved because they began working on this Personal and Social Development Program.	not changed because they began working on this Personal and Social Development Program. The program has not influenced the way they now act.	produced less desirable results for themselves or others because they began working on this Personal and Social Development Program.
	N	N	N
PLAN Teachers	1	6	0

9. In STEP 4 (the last step) of the second orientation booklet, they decided

	ALTERNATIVE			
	not to work on any more booklets in this Personal and Social Development Program	to work on at least one of the specific booklets which try to help students encourage their behaviors.	to work on at least one of the specific booklets which try to help students improve their behaviors.	to work on at least one encourage and one improve booklet.
	N	N	N	N
PLAN Teachers	Some	Some	Some	Most

10. I think that other fifth and sixth grade students at my school should

	ALTERNATIVE		
	take these orientation activities--everybody can profit from them.	take these orientation activities only if they want and need them.	not take these orientation activities--they won't help students at all.
	N	N	N
PLAN Teachers	2	7	0

11. I think that the Personal an Social Development Program, at least from what I know about it, should

	ALTERNATIVE	
	be included in all Project PLAN classes each school year.	not be included in all Project PLAN classes each school year.
	N	N
PLAN Teachers	8	1

TABLE 23

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12. List below any ways you think the first orientation booklet, "Part I - Managing Your Behavior," and its activities might be improved.

a. Looking up the vocabulary words was confusing and disliked by some.

b. Let students make up their own role play situations.

c. On front of booklets write "DO NOT WRITE IN THIS BOOKLET."

d. Should be better organized so that large groups of children are not finished at the same time, waiting for meetings.

13. List below any ways you think the second orientation booklet, "Part II - Personal Problem Solving," and its activities might be improved.

a. The second booklet needed to have an activity such as a role play.

b. It was difficult for the children to see the relationship between the booklet problems and their own problems.

c. Should be shorter with simpler vocabulary.

d. The concepts of "before" and "after" conditions were difficult.

14. List below any parts of the orientation booklets or activities which you couldn't understand, which were difficult, or which weren't very interesting or helpful.

a. The children had difficulty in transferring the material discussed in the booklet to themselves. This was particularly true of the problem-solving skills.

b. The second booklet was more difficult than the first. So much print was discouraging to the less capable students.

TABLE 24

(Page 1 of 6)

STUDENT REACTIONS TO PSDP PRESCRIBED LEARNING EXPERIENCE BOOKLETS - INTERMEDIATE LEVEL

1. Which type of booklet did you work on?

	ALTERNATIVE					
	A booklet on a Behavior to be Encouraged.		A booklet on a Behavior to be Improved.		I cannot remember which type of booklet it was.	
	N	%	N	%	N	%
PLAN Students	76	26	124	42	92	32
Non-PLAN Students	23	20	48	42	44	38
Total	99	24	172	42	136	33

2. What was the title of the booklet? In other words, what behaviors did it talk about?

	Dealing Effectively with Difficult Situations		Carrying Through on Assigned and Agreed-Upon Tasks with Responsibility and Effort		Showing Independence, Initiative, and Originality		Showing Honesty and Integrity		Showing Consideration for the Feelings of Others		Contributing to Group Interests and Goals		Dealing Effectively with Rules, Conventions, and Teacher Suggestions		Didn't remember	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
PLAN Students	23	7	5	1	32	10	44	14	52	16	29	9	28	9	106	34
Non-PLAN Students	6	5	4	3	2	2	14	12	10	9	4	4	5	4	71	61
Total	29	6	9	2	34	8	58	13	62	14	33	8	33	8	177	41

3. How much of the booklet did you work on?

	ALTERNATIVE					
	No more than Steps 1, 2, or 3.		No more than Steps 4, 5, or 6.		I completed all seven steps.	
	N	%	N	%	N	%
PLAN Students	77	27	53	18	158	55
Non-PLAN Students	15	14	34	31	60	55
Total	92	23	87	22	218	55

4. If you did not work on all the steps in your booklet, state why you did not complete it.

	Didn't like it.		No time.		Other.	
	N	%	N	%	N	%
PLAN Students	22	25	39	45	26	30
Non-PLAN Students	7	14	28	57	14	29
Total	29	21	67	49	40	30

TABLE 24

(Page 2 of 6)

5. The booklet I read helped me understand myself:

	ALTERNATIVE									
	much better.		better.		I'm undecided.		not much at all.		not at all.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	52	18	87	30	57	20	36	13	55	19
Non-PLAN Students	34	30	37	33	20	18	12	11	10	8
Total	86	22	124	31	77	19	48	12	65	16

6. The booklet I read helped me understand others:

	ALTERNATIVE									
	much better.		better.		I'm undecided.		not much at all.		not at all.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	41	14	100	34	61	21	31	11	57	20
Non-PLAN Students	33	30	43	39	16	14	13	11	6	6
Total	74	18	143	36	77	19	44	11	63	16

7. As a result of working on the booklet, one or more of my personal or social behaviors have:

	ALTERNATIVE									
	improved a great deal.		improved some.		not changed at all.		become a little worse.		become a lot worse.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	50	17	132	46	94	32	5	2	9	3
Non-PLAN Students	24	20	59	53	22	20	3	3	4	4
Total	74	18	191	48	116	29	8	2	13	3

8. If the booklet helped you change at least one of your behaviors in the way you wanted, do you think that change will last?

	ALTERNATIVE					
	It helped me change my behavior only as long as I worked on the booklet.		It helped me change my behavior but that change won't last.		It helped me change my behavior and I think the change will last.	
	N	%	N	%	N	%
PLAN Students	45	19	55	23	137	58
Non-PLAN Students	12	13	23	24	59	63
Total	57	16	78	23	196	60

TABLE 24

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9. I think that the work in this booklet was:

	ALTERNATIVE									
	very useful to me; it helped me meet the goal I wanted.		useful to me; it helped me move toward the goal I wanted.		I'm undecided.		probably wasted; not very useful to me.		a waste of time; not useful to me at all.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	64	23	72	26	65	23	24	9	55	19
Non-PLAN Students	32	29	35	32	19	18	11	10	12	11
Total	96	25	107	28	84	22	35	9	67	17

10. If you think that this booklet was helpful, in what way did it help you?

A. What specific behaviors did you change?

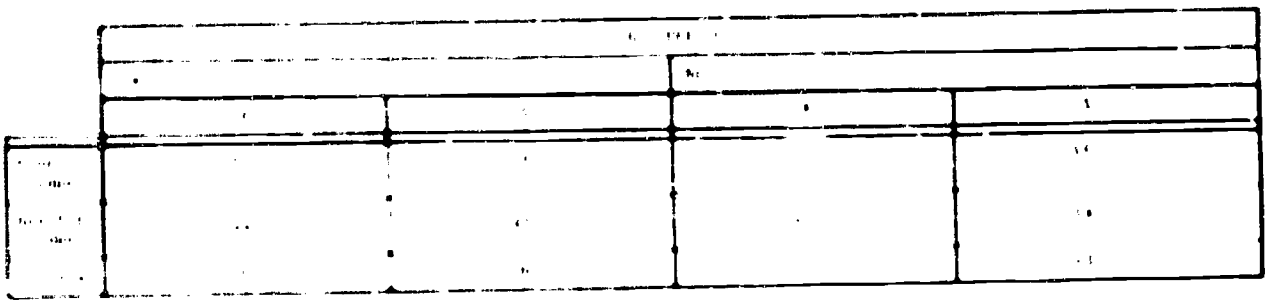
	Helped change a specific behavior.		Didn't help change.	
	N	%	N	%
PLAN Students	111	74	39	26
Non-PLAN Students	58	83	12	17
Total	169	77	51	23

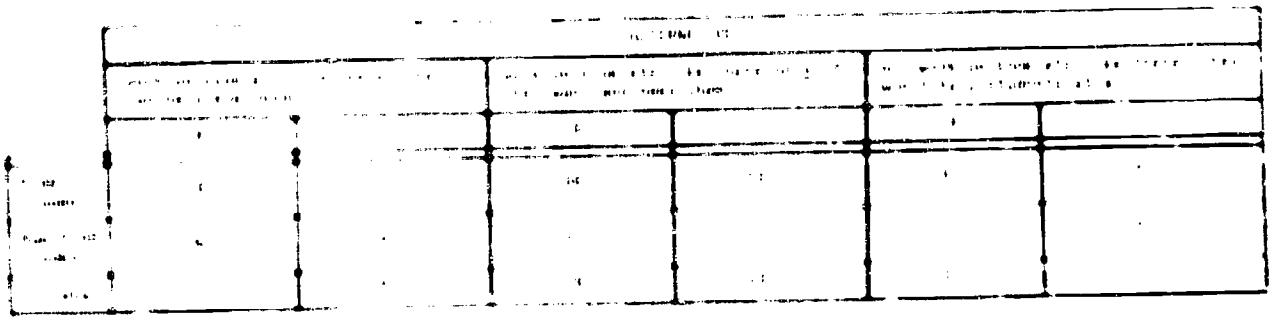
B. How did you change?

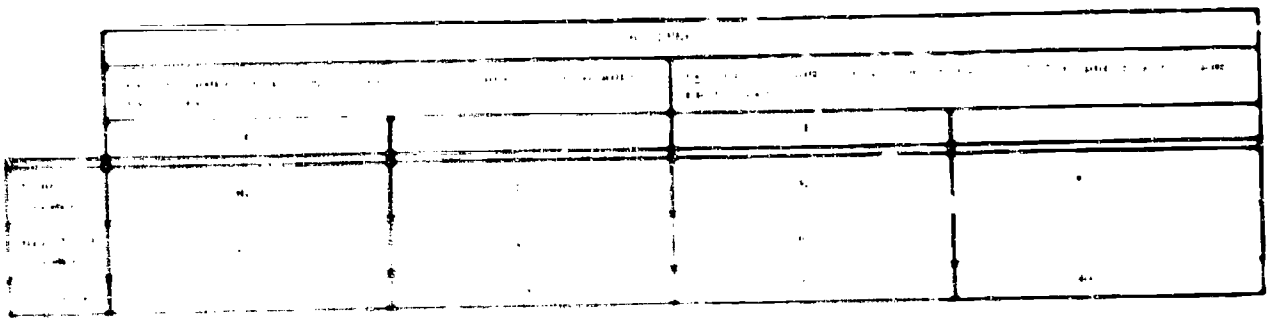
	Changed for the better.		Didn't change or got worse.	
	N	%	N	%
PLAN Students	101	72	39	28
Non-PLAN Students	57	84	11	16
Total	158	76	50	24

11. If you think that your booklet was not helpful, state why it was not helpful.

	Non-specific negative comments		Specific reasons	
	N	%	N	%
PLAN Students	65	75	20	24
Non-PLAN Students	15	63	9	37
Total	80	73	29	27







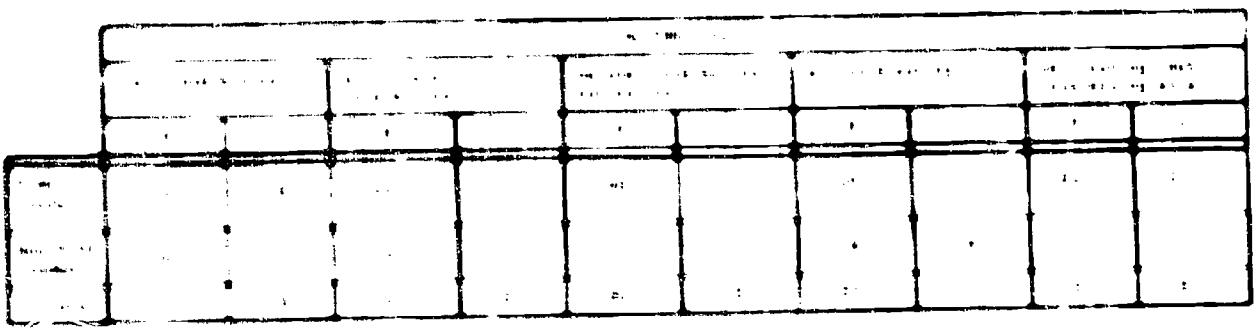


TABLE 24

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16. This booklet was.

	ALTERNATIVE									
	excellent - easy to read and to understand; not confusing at all.		good - I had a little trouble reading; and understanding it; it was a little confusing.		fair - I didn't find it easy or difficult to read and understand.		poor - difficult to read and to understand; it was quite confusing.		horrible - impossible to read and understand; very confusing material.	
	N	%	N	%	N	%	N	%	N	%
PLAN Students	[illegible]	41	[illegible]	23	56	20	12	4	34	12
Non-PLAN Students	[illegible]	[illegible]	[illegible]	[illegible]	14	14	5	5	6	6
Total	[illegible]	38	[illegible]	30	70	18	17	4	40	10

[illegible] when I worked in this booklet, it was hard for me:

to remember the details of specific behaviors I performed.

	ALTERNATIVE			
	Yes		No	
	N	%	N	%
PLAN Students	[illegible]	41	[illegible]	59
Non-PLAN Students	[illegible]	[illegible]	45	[illegible]
Total	[illegible]	44	203	56

[illegible] understand the "before" and [illegible] to remember the "befores" and "afters."

	ALTERNATIVE			
	Yes		No	
	N	%	N	%
PLAN Students	[illegible]	45	[illegible]	55
Non-PLAN Students	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] that was [illegible]

	ALTERNATIVE			
	Yes		No	
	N	%	N	%
PLAN Students	[illegible]	[illegible]	[illegible]	[illegible]
Non-PLAN Students	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]

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TABLE 24

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. to remember to keep a daily record of my progress.

	ALTERNATIVE			
	Yes		No	
	N	%	N	%
PLAN Students	118	48	129	52
Non-PLAN Students	47	60	31	40
Total	165	51	160	49

18. List any suggestions you have for improving the booklet on which you worked.

	No improvement needed.		Negative comments.		Specific constructive suggestions.	
	N	%	N	%	N	%
PLAN Students	47	40	35	29	37	31
Non-PLAN Students	17	43	8	21	14	36
Total	64	41	43	27	51	32

TABLE 25

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REACTIONS OF THE FOUR NON-PROJECT PLAN TEACHERS AND THE NINE PROJECT PLAN TEACHERS TO THE PSDP BOOKLETS - INTERMEDIATE LEVEL

1. In general, the booklets on which my students worked helped them understand themselves:

	ALTERNATIVE				
	much better.	better.	I'm undecided.	not much at all.	not at all.
	N	N	N	N	N
Non-PLAN Teachers	0	0	1	3	0
PLAN Teachers	0	6	2	1	0
Total	0	6	3	4	0

2. In general, the booklets on which my students worked helped them understand others:

	ALTERNATIVE				
	much better.	better.	I'm undecided.	not much at all.	not at all.
	N	N	N	N	N
Non-PLAN Teachers	0	0	1	3	0
PLAN Teachers	0	6	2	1	0
Total	0	6	3	4	0

3. As a result of working on these booklets, one or more of the personal or social behaviors of most of my students have:

	ALTERNATIVE				
	improved a great deal.	improved some.	not changed at all.	become a little worse.	become a lot worse.
	N	N	N	N	N
Non-PLAN Teachers	0	1	3	0	0
PLAN Teachers	0	8	1	0	0
Total	0	9	4	0	0

4. If the booklets helped most of your students change at least one of their behaviors in the way they wanted, do you think that change will last?

	ALTERNATIVE		
	It helped them change their behaviors only as long as they worked on the booklets.	It helped them change their behaviors but that change won't last.	It helped them change their behaviors and I think the change will last.
	N	N	N
Non-PLAN Teachers	1	0	1
PLAN Teachers	0	3	4
Total	1	3	5

TABLE 25

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5. I think that the work on these booklets was:

	ALTERNATIVE				
	very useful to most of my students; it helped them meet the goals they wanted.	useful to most of my students; it helped them move toward the goals they wanted.	I'm undecided.	probably wasted; not very useful to them.	a waste of time; not useful to them at all.
	N	N	N	N	N
Non-PLAN Teachers	0	1	1	2	0
PLAN Teachers	0	6	3	0	0
Total	0	7	4	2	0

6. If you think that some or all of these booklets were helpful, in what ways did they help your students?

A. What specific behaviors did they change?

Non-PLAN Teachers	(1) Not noticeable. (2) Helped children focus on behavior but I'm not sure the behavior changed.
PLAN Teachers	(1) Children improved particularly in the areas of "Showing Consideration for the Feelings of Others" and "Dealing with Difficult Situations." Booklets which required a change in behavior seemed to work best. (2) Children became more thoughtful of the consequences of their actions. (3) Even though this was extra work, in general the children were willing to do it.

B. How did they change?

Non-PLAN Teachers	(1) They felt guilty if they misbehaved, but they still misbehaved.
PLAN Teachers	(1) Students recognized they had a problem and were surprised to find they could do something about it. Since others also had problems, they didn't feel isolated. (2) They made efforts to help and include others in school work and play. (3) Better group and peer relations. (4) Better attitudes toward school and work. (5) Better at controlling tempers. (6) More willing to participate in groups.

7. If you think that some or all of these booklets were not helpful, state why they were not helpful.

Non-PLAN Teachers	(1) Too complicated for students to follow. (2) Vocabulary too advanced. (3) Some booklets were not appropriate for the children to whom they were assigned.
PLAN Teachers	(1) Vocabulary too difficult. (2) Too long. (3) Too unstructured for fifth graders. Need more clarification, discussion, and reinforcement. (4) Students felt it took time from their regular work. (5) Some students didn't feel a need for improvement.

TABLE 25

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8. At some future time if most of your students had the chance, would they like to work on another booklet to improve another one of their behaviors?

	ATERNATIVE	
	Yes.	No.
	N	N
Non-PLAN Teachers	1	3
PLAN Teachers	7	1
Total	8	4

9. I think that other fifth and sixth grade students at my school should:

	ALTERNATIVE		
	work on booklets like these--they can help everybody.	work on booklets like these only if they want and need them.	not work on booklets like these--they won't help students at all.
	N	N	N
Non-PLAN Teachers	0	2	1
PLAN Teachers	0	9	0
Total	0	11	1

10. I think the Personal and Social Development Program, at least from what I now know about it, should:

	ALTERNATIVE	
	be included in all my school's fifth and sixth grades each year.	not be included in all my school's fifth and sixth grades each year.
	N	N
Non-PLAN Teachers	1	3
PLAN Teachers	8	1
Total	9	4

11. Most of the booklets on which my students worked and their activities were:

	ALTERNATIVE				
	very interesting.	a little bit interesting.	neither interesting nor boring.	a little boring.	very boring; not interesting at all.
	N	N	N	N	N
Non-PLAN Teachers	0	1	0	1	2
PLAN Teachers	2	6	0	0	0
Total	2	7	0	1	2

TABLE 25

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12. Most of these booklets were:

	ALTERNATIVE				
	excellent - easy to read and to understand; not confusing at all.	good - most students had a little trouble reading and understanding them; they were a little confusing.	fair - most students didn't find them easy or difficult to read and understand.	poor - difficult to read and understand; they were quite confusing.	horrible - impossible to read and understand; very confusing material.
	N	N	N	N	N
Non-PLAN Teachers	0	1	1	2	0
PLAN Teachers	0	8	1	0	0
Total	0	9	2	2	0

13. When my students worked on these booklets, it was difficult for them:

. to remember the details of specific behaviors they performed.

	ALTERNATIVE		
	Yes.	No.	Could not evaluate.
	N	N	N
Non-PLAN Teachers	3	0	1
PLAN Teachers	5	4	0
Total	8	4	1

. to choose a plan that would work.

	ALTERNATIVE		
	Yes.	No.	Could not evaluate.
	N	N	N
Non-PLAN Teachers	2	0	2
PLAN Teachers	8	1	0
Total	10	1	2

. to remember to keep a daily record of their progress.

	ALTERNATIVE		
	Yes.	No.	Could not evaluate.
	N	N	N
Non-PLAN Teachers	2	0	2
PLAN Teachers	7	2	0
Total	9	2	2

TABLE 25

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14. List any suggestions you have for improving the booklets on which your students worked.

Non-PLAN Teachers	(1) Make directions easier to follow. (2) Make booklets shorter with easier vocabulary.
PLAN Teachers	(1) Simplify the vocabulary. (2) Make the booklets shorter. (3) More activities and specific examples. (4) Include some "home environment" activities which involve parents and siblings.

15. Do you have any other comments regarding your own feeling or the feeling of your students toward the PLE booklets?

Non-PLAN Teachers	(1) Children really resented the assessment. Going through all the items was tiring and they didn't like telling on their friends. (2) A few children liked the booklets and finished early; others didn't care for them but were encouraged to finish.
PLAN Teachers	(1) Students highly disliked the assessment and this created, in some, a negative attitude toward the whole program. (2) Think program is more realistic and straightforward than others I have seen. (3) Operation might be quite different if only a few students were involved as needed. (4) If a student doesn't want to work on booklets, he should not. Encourage him to do so, but he must want to help himself. (5) Working on booklets made them more aware of their behavior and that of others. (6) Booklets were great. Would love to see them used at the beginning of each year.

16. Most of my students required the following amount of teacher assistance while working on the PLE booklets.

	ALTERNATIVE			
	little or none at all.	a moderate amount--no different than any other typical instructional materials.	a lot of help--really kept me busy.	far too much help--overburdened me.
	N	N	N	N
Non-PLAN Teachers	0	1	3	0
PLAN Teachers	1	5	1	1
Total	1	6	4	1

17. What additional help, if any, do you think your students could have used in these booklets?

Non-PLAN Teachers	No responses.
PLAN Teachers	(1) A great deal. Teachers didn't have time to give all the help students needed. More time is needed to discuss material and for individual conferencing. (2) Ability to read better and understand what is read.

18. What percentage of your students completed their booklets?

	ALTERNATIVE					
	100%	80%	60%	40%	20% or less	I don't know.
	N	N	N	N	N	N
Non-PLAN Teachers	1	0	3	0	0	0
PLAN Teachers	4	2	2	0	1	0
Total	5	2	5	0	1	0

TABLE 25

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19. Did most of your students understand the "befores" or "afters" concepts?

	ALTERNATIVE	
	No.	Yes.
	N	N
Non-PLAN Teachers	1	3
PLAN Teachers	3	4
Total	4	7

20. Could most of your students recall "befores" or "afters" for their own behaviors?

	ALTERNATIVE	
	No.	Yes.
	N	N
Non-PLAN Teachers	3	1
PLAN Teachers	3	5
Total	6	6

21. What difficulty, if any, do you think your students had in choosing a plan for trying to change their behaviors through a PLE booklet?

Non-PLAN Teachers	(1) They could not think of a plan without help. (2) Didn't really understand what a plan was. (3) They had difficulty connecting the booklet with real life.
PLAN Teachers	(1) Didn't thoroughly understand concept of choosing a plan. Often couldn't see relationship of plan to effort to change. Hard to transfer to own life. (2) They didn't make their goals specific enough--too general and too high. (3) Not enough teacher time to work individually with student; to conference and help develop a plan. (4) If student assigned to an "Encourage" PLE, they felt they already were doing all they could. (5) If not working on a booklet of their choice, did not know how or where to go.

22. Did most of your students keep records of their behavior modification progress as they worked through the booklets?

	ALTERNATIVE	
	No.	Yes
	N	N
Non-PLAN Teachers	2	1
PLAN Teachers	7	2
Total	9	3

23. What percentage of your students seemed to involve their parents in what they were trying to do as they worked through their booklets?

	ALTERNATIVE					
	100%	80%	60%	40%	20% or less	I don't know.
	N	N	N	N	N	N
Non-PLAN Teachers	0	0	0	0	3	1
PLAN Teachers	0	1	2	1	2	3
Total	0	1	2	1	5	4

TABLE 26

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STUDENT REACTIONS TO THE HIGH SCHOOL SOCIAL SITUATIONS TEST AND BOOKLETS

PART I - QUESTIONS ON THE TEST ITSELF

1. The directions for the test were:

	ALTERNATIVE									
	excellent - easy to understand; not confusing at all.		ood - I had a little rouble understanding them; it was a little confusing.		fair - I didn't find them confusing or clear.		poor - difficult to understand; I was quite confused.		horrible - impossible to understand; very confusing material.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	11	34	12	38	4	12	5	16	0	0

Please make any helpful suggestions or comments:

Example suggestions or comments: Couldn't hear.

Needed more time.

Would like more detailed description of actor and participant role.

2. In general, the test situations in which I participated were:

	very interesting.		quite interesting but I could have been more interested.		neither interesting nor boring.		a little boring.		very boring; I was not interested at all.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	1	32	15	44	3	9	5	15	0	0

3. In what ways could the situations be made more interesting?

Example suggestions or comments: Too many behaviors on Record Sheet.

Situations should have an actual solution.

Not so many school-related situations.

Smaller groups.

More time.

More realistic topics, e.g., dope and sex.

Use people who don't know each other (adults, coed).

4. In general, the test situations in which I participated were:

	ALTERNATIVE									
	very realistic; that is, similar to real life.		quite realistic, but they could have been more so.		neither realistic nor unrealistic.		a little unrealistic.		very unrealistic.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	3	9	16	50	3	9	5	16	5	16

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5. Please write any suggestions you have for making the situations more realistic.

Example suggestions or comments: We tended to overdo things.

Group situations were least realistic.

In Situation L, participant had to face yearbook editor. It was a bad situation because you have to defend something you really didn't think was right.

Situation R - it's very unlikely that a student would reprimand the school's cook.

PART II - QUESTIONS ON THE ORIENTATION AND BEHAVIOR MODIFICATION BOOKLETS

6. The orientation booklet, "Chance to Change," was:

	ALTERNATIVE									
	too easy to read and understand; not advanced enough.		easy to read and understand; not confusing at all.		a little confusing; I had a little trouble reading and understanding it.		difficult to read and understand; I was quite confused.		impossible to read and understand; very confusing material.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	10	29	17	50	6	18	1	3	0	0

7. The orientation booklet, "Chance to Change," was:

	ALTERNATIVE									
	very interesting.		quite interesting, but I could have been more interested.		neither interesting nor boring.		a little boring.		very boring; I was not interested at all.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	1	3	16	49	9	27	6	18	1	3

8. Please write any suggestions you have for making the orientation booklet, "Chance to Change," more interesting.

Example suggestions or comments: Explanations to the stories were too obvious--stories alone were okay.

Too simple, adolescent, kindergardenish.

Less melodrama and more explanation of purpose.

9. The behavior modification booklet I read was:

	ALTERNATIVE									
	too easy to read and understand; not advanced enough.		easy to read and understand; not confusing at all.		a little confusing; I had a little trouble reading and understanding it.		difficult to read and understand; I was quite confused.		impossible to read and understand; very confusing material.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	8	26	17	55	5	16	1	3	0	0

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10. The behavior modification booklet I read was:

	ALTERNATIVE									
	very interesting.		quite interesting; but I could have been more interested.		neither interesting nor boring.		a little boring.		very boring; I was not interested at all.	
	N	%	N	%	N	%	N	%	N	%
Non-PLAN Students	3	10	15	48	8	26	2	6	3	10

11. Please write any suggestions you have for making the behavior modification booklets more interesting:

Example suggestions or comments: Need more insight into the problems.

Should have more discussion with close friends.

Examples fine, but didn't impress me as helpful.

Too narrow--oversimplified.

More details--too general.

PART III - GENERAL QUESTIONS

12. The HSSST and behavior modification booklets have:

	ALTERNATIVE			
	helped me understand my own behavior and that of other people.		not helped me understand my own behavior and that of other people.	
	N	%	N	%
Non-PLAN Students	23	72	9	28

13. The HSSST and behavior modification booklets have:

	ALTERNATIVE			
	not interested me in trying to manage and change my behavior to get better results from my actions.		interested me in trying to manage and change my behavior to get better results from my actions.	
	N	%	N	%
Non-PLAN Students	11	34	21	66

14. One or more of my personal and social behaviors have:

	ALTERNATIVE					
	improved because I worked on this program.		not changed. The program has not influenced the way I now act.		become worse because I worked on this program.	
	N	%	N	%	N	%
Non-PLAN Students	18	56	14	44	0	0

TABLE 26

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15. I think that other high school students should:

	ALTERNATIVE					
	take part in this program; everyone can profit from it.		take part in this program only if they want to.		not take part in this program; it won't help them at all.	
	%		%		%	
Native American Students	14	44	18	56	0	0

Please add any other comments, suggestions, and reactions:

Examples of comments, suggestions, and reactions

Very good--can benefit if taken seriously.

I found the whole thing a little boring.

Good idea, but could be condensed.

The students who didn't want to [illegible] need it most.

Helped me understand myself in certain situations.

Interesting. I enjoyed it.

It stimulated people to at least attempt to change