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ABSTRACT

This text is the first in a series of handbook providing methodology information for drug program planners and administrators. This handbook is designed to address the private sector need for assistance in their consideration of methods, techniques and approaches necessary for effective local program implementation and evaluation. The first section of the handbook describes program objectives, goal setting considerations, pitfalls in data collection, and research designs considered appropriate for the evaluation of drug education programs. The second section presents a number of reliable measures for program evaluation, an orientation for the effective use of the sample instruments, and information for locating additional measures. Drug education measures for use with young children, adolescents, college students and adults are included or described. The third and final section deals with the analysis and interpretation of data, and includes discussions on student evaluation results, the use of computers and the dimensions of program planning. (Author/SJL)

ACCOUNTABILITY IN DRUG EDUCATION

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a model for evaluation

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The Drug Abuse Council, Inc.

NOVEMBER 1973 HS-1

UNTABILITY IN DRUG EDUCATION

L. Annette Abrams
Emily F. Garfield
John D. Swisher
EDITORS

a model for evaluation

Council, Inc.
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Foreword

The Drug Abuse Council, Inc. is a private, tax-exempt foundation which was established in February 1972 to serve on a national level as an independent source of needed research, public policy evaluation and program guidance in the areas of drug use and misuse. It is supported by the Ford Foundation, Commonwealth Fund, Carnegie Corporation, Henry J. Kaiser Family Foundation and the Equitable Life Assurance Society of the U.S.

Through its publications and other activities, the Council hopes to provide non-partisan, objective information and analysis and serve as a resource for those organizations and individuals searching for new, more effective approaches to non-medical drug use in our society. For a complete publications list, please refer to the back of this report.

ACCOUNTABILITY IN DRUG EDUCATION: A MODEL FOR EVALUATION is first in a series of Handbooks providing useable methodological information for drug program planners and administrators. The Council's Handbook Series, and specifically **ACCOUNTABILITY IN DRUG EDUCATION**, is designed to address the private sector need for assistance in their consideration of methods, techniques and approaches necessary for effective local program implementation and evaluation.

Despite current interest in program assessment and accountability, drug educators and administrators have found drug-related evaluation material to be virtually nonexistent. Therefore, **ACCOUNTABILITY IN DRUG EDUCATION** offers comprehensive discussions of the research fundamentals which are often overlooked in our search for better drug education programs. Because the schools occupy a primary position in youthful learning about drugs, this information with its inherent emphasis on critical outcome measurement, is crucial to more effective school prevention activities.

Over the last seven years, drug educators, through a continuing process of trial, error, success and failure, have learned about the need to refine, test and re-define experimental drug education endeavors. Accordingly, The Drug Abuse Council has invested staff time, made small grants to projects exploring the "state of the art" of drug education and sought the guidance of educational leaders in the field in order to gain a valid

perspective of the evolution of school drug education. Consequently, this handbook reflects both public attitudes about drug education and the expressed needs of many school planners responsible for drug education efforts.

The handbook, therefore, was commissioned in response to: 1) *The mounting complexities surrounding drug education goals and outcomes.* At present the public is confused about the seeming inability of traditional school drug programs to arrest the growing prevalence of drug use among young people. Yet despite drug education's perplexing history, parents, legislators, policymakers and young people alike retain their faith in the schools; collectively these groups offer grateful support to the kind of qualitative research and progress this manual is intended to catalyze. 2) *The dearth of reliable research guidelines and resources for schools and agencies which desire some gauge of their effectiveness.* School authorities, having accepted drug teaching-and-learning challenges during the previous decade, are anxious to hold accountable those who promise panaceas for the complex drug problems resting in their hands. School personnel, therefore, are both encouraged by the emergence of promising methodologies, yet wary enough of "promise" to undertake assessment procedures prior to the adoption of new techniques.

For both the public-at-large and school personnel, evaluation underscores their interest in insuring the accountability of drug education. The Drug Abuse Council hopes this handbook will facilitate the achievement of higher calibre research and more effective programming in the area of drug education. Through its use educators can sharpen their perceptions of drug education evaluation in a broader context by comparing local programs to other program research reported. In addition, the public-at-large can develop realistic standards of comparison and adjust their expectations based on a knowledge of past and present progress in the field. Finally, policy makers can more feasibly define the level of support that will afford the wide variety of drug education research and development efforts which are emerging.

In general, the handbook should be perceived as a tool for school and agency drug personnel needing substantive points of departure in undertaking drug education research. For other readers, the handbook can clarify a number of programmatic concerns and enhance their sensitivity to t ing drug educators as well as youth.

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We are equally grateful to the other contributing authors for providing us with the benefit of their time and expertise above and beyond the organization of chapter material. These individuals—Richard H. Blum, Emily Garfield, Ross Goodell, Allen J. Gruman, John J. Horan, Donald Jones, John F. Strandmark, John D. Swisher and Richard W. Warner—provided the high calibre of advice and writing necessary for completion of a project of this magnitude.

We are deeply indebted to members of the "Handbook Advisory Committee": Orly Jackson, Coordinator of Drug Education, Alameda County School Department; Helen Nowlis, Director of Health and Nutrition Programs, U.S. Office of Education; Vincent Nowlis, Chairman of the Education Policy Committee, Special Action Office for Drug Abuse Prevention; and Louise Richards, Chief of Socio-Cultural Studies for the National Institute of Mental Health's Center for the Study of Narcotic and Drug Abuse. Advisory Committee members provided invaluable advice, criticism and support in discussions of project ideas as well as critiques of many first drafts and outlines.

Thanks are also due to Martha Mallard-Mitchell, John Sessler and Jacquelyn Volpe of the Council's staff, and Leon Hunt, whose criticisms of final drafts assured a more thorough and polished publication. Final work on the handbook was completed with the editorial assistance of Robert Carr, along with incomparable support and assistance from Linda Bethea, Jean Johnson, Joanne Platt and Naomi Swann.

Introduction and Overview

by

L. Annette Abrams

INTRODUCTION

Most drug education programs are having some degree success. It is unfortunate, however, that most drug programs also having some degree of failure. It is for this reason that drug education evaluation handbook was developed.

Accordingly, to quote Charles Silberman, "our bias, it should emphasized, was not that everything now being done is necessar wrong; it was simply that everything now being done needs to questioned. In an era of radical change such as the present, approach is more impractical than one which takes the prese arrangements and practices as given, asking only, 'How can we what we are now doing more effectively?' "

Because the future of drug education requires, we believe, acceptance of change—in techniques, in assumptions, in prof sional roles, in objectives—this publication focuses on the int connected processes of research, analysis and planning. Evaluati is a process which when fully developed is a cyclic, continuo aspect of any educational or social services program. Any of t components of this process, depending on a program's stage development and resources, is a potential point of departure planning research. The handbook's organization, as discussed la in this introduction, represents a sequence of steps (chapte suggested for readers pursuing their own evaluations.

Given the range and focus of the handbook, its prima readership will undoubtedly comprise educational administrato drug educators and researchers. In addition, the handbook intended to offer other readers a valuable perspective on seve essential research areas. It is hoped that all who utilize t handbook will recognize that serious educational research, co ducted with professional assistance, is long overdue; that on through rigorous, comprehensive evaluations of each progra typology and its variations will we gain the knowledge for futu growth and change.

Before describing the handbook's structure, a discussion fundamental definitions is in order. "In order to make sense out the enormous and often conflicting information about drugs . . drug education programs . . . must develop a grasp of some of t terms used to discuss drugs, must view drugs and the drug proble

in a wider perspective, and finally, must establish rational criteria for (their) determinations of the potential 'harmfulness' of the different substances currently being used and abused" (Irwin, 1970).

To begin with, the authors (with few exceptions) avoid the term "drug *abuse* education," preferring simply "drug education" as a less confusing, yet adequately descriptive term. As currently defined, "drug education" can focus directly on various drugs as substances, or might attempt to achieve a particular outcome by focusing on those individual phenomena having implications for social behavior. More specific definitions of the drug education process must ultimately be based on "hard" research data.[1]

"Drug education" has as many meanings as the term "education" itself. Generally speaking, however, the following quotation by Dr. Helen Nowlis clarifies by distinguishing among broad educational aims:

> I would like to distinguish briefly among three different kinds of education. The first one . . . is education equated with the imparting of information . . . in order to change opinion and hopefully behavior.
>
> There is a second kind of education which, still heavily depending on information, begins to use some of the information that psychology and other behavioral sciences have developed and tries to tailor that information to the level of physical, psychological and social development of the individual.
>
> . . . what we really need to do is look at education as the facilitation of learning. It is not what we teach but what young people learn that is crucial. If what we are going to do is zero in on that *individual* . . . then I think we begin to recognize the enormity of the task we have before us.
>
> (From remarks by Helen Nowlis at Hofstra University, September 1971)

[1] The National Education Association defines "drug education" as "a learning process that influences an individual emotionally, intellectually, psychologically, and socially, and that may result in the modification of attitudes that influence behavior. It not only involves the formal mechanism of presenting information but also includes a series of experiences and influences that help shape the learning environment - the atmosphere of the school, the life-style present at home, the attitude of parents, the pressures within a peer group, the popular culture, the personal experiences with or without drugs, and the availability of alternative mechanisms employed to carry out certain kinds of behavior." National Education Association, *Drug Education An Awakening*, A Report of the NEA Task Force on Drug Education, Washington, D.C., 1972 (p. 7).

The term "evaluation" refers throughe measurement or assessment of the *impa* program activity has on a particular audien throughout this publication, efficient evalu neous decision-making regarding numerous r each of these considerations represents an of the total evaluation process.

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The term "evaluation" refers throughout this handbook to measurement or assessment of the *impact* which a particular program activity has on a particular audience. As is re-emphasized throughout this publication, efficient evaluation requires simultaneous decision-making regarding numerous research considerations; each of these considerations represents an interacting component of the total evaluation process.

Our emphasis on the *process* of evaluation resembles, philosophically, many of the U.S. Office of Education's (USOE) program evaluation tenets. The handbook, for example, aligns with USOE's belief that the assessment process is ongoing—beginning, ending and beginning again with program planning and modification. "This approach (USOE evaluation) is structured to keep the *ends* constantly in view as guidepoints for development, they may serve as well as criteria for judging success."

The USOE system of evaluation,[2] since it is computer based, differs operationally from many procedures outlines in this handbook. Nevertheless, USOE stresses many fundamental points which are worthy of mention in this introduction. To quote a report on USOE's Information Support System:

1. The system focuses "on a *process,* rather than merely totalling up the accomplishment of tasks and the delivery of products . . . the design process (will) allow the system to change as the program changes; (it will) incorporate continuing feedback and reaction to modify the system as it is implemented." On one level, this philosophy equates evaluation with the program judgments made daily by administrators. Accordingly, the evaluative focus is on the local level; local program people are encouraged to practice assessment skills. Thus dependence on outside evaluators and government expertise is decreased.

[2] In 1973 the USOE developed an Information Support System (ISS) to evaluate and disseminate information on effective programs and techniques. Developed by E. F. Shelley and Company, Inc., of Washington, D.C., the ISS is expected to enhance the ability of USOE program staff and OE grantees to respond to mounting community drug education needs. This computerized information system will use a "people-problem" frame of reference, thus encouraging project staff to report failures and successes. The System will thus measure both how efficiently programs are operated and the impact of such programs on communities.

2. From a program administrator's point of view ". . . 'chiefs' get better informed by having better informed Indians . . . *first* the local project must be able to define its purposes and assess its progress before any meaningful assessment can be provided (for use by other individuals and agencies)." The USOE system emphasizes the inter-dependence between information and relationships, assuming that relationships between individuals or agencies require regular communication or flow of information in order to "set" them. This regular flow of valid information requires the establishment of trusting, supportive relationships.
3. ". . . projects (are encouraged) to define purposes in terms of actual effects on clients (students or other learners)." This "end-related" assessment system acknowledges the educator's primary relationship with the student as well as the educator's responsibility to share information about the program's impact with administrators who are more detached from the student. Generally USOE's process evaluation seeks to maximize these internal relationships as a part of program design, analysis and so on. Needless to say, student involvement is emphasized as a means to increase program relevancy.
4. Finally, USOE seminally defines evaluation as an exercise in problem-solving, and any problem-solving process is one of trial and error. The differences between what is planned and what actually happens are the raw materials for learning what to do next. If, in this search for future direction, a project is "punished" by a funding agency, everyone loses Therefore, USOE is tolerant of failures, if they become the basis for effective future planning and growth. The term evaluation is influenced by many factors which are discussed in the chapters following this introduction.

OVERVIEW OF DRUG EDUCATION RESEARCH

Public interest in drug education is widespread—public officials, researchers and educators alike are seeking viable points of departure in developing reliable evaluati level, for example, the *1973 Federal Str Drug Traffic Prevention* states that " efforts should concentrate on developin drug use prevention in the school sys funding should include clearly articul designs that are structured to permit ad efforts must focus on a more carefull tored examination of what componen education produce significant impact i use. Once we have a better idea of w strably effective, we can then reass large-scale efforts."

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F DRUG EDUCATION RESEARCH

rug education is widespread—public officials, cators alike are seeking viable points of departure in developing reliable evaluative strategies. At the policy level, for example, the *1973 Federal Strategy for Drug Abuse and Drug Traffic Prevention* states that "federal (drug education) efforts should concentrate on developing innovative approaches to drug use prevention in the school system, but the criteria for funding should include clearly articulated goals and objective designs that are structured to permit adequate evaluation. Future efforts must focus on a more carefully and scientifically monitored examination of what components, if any, of drug abuse education produce significant impact in terms of reducing drug use. Once we have a better idea of what programs are demonstrably effective, we can then reassess the need for further large-scale efforts."

One cannot overlook the national and state policymakers who are dubious about the ability of local program personnel to succeed at evaluation. Many of these public officials are uncertain about further exploration in drug education because of recent federally-funded research findings. Such research, critical of traditional drug education, supports experimental programs having aims which transcend simple transmission of factual information.

To support further testing and exploration, legislators are encouraging school personnel to undertake drug education evaluation projects. For example, the recently-introduced "Drug Abuse Education Extension Act of 1973" authorizes continued legislative support for federally funded prevention efforts, as well as annual evaluations of all HEW-funded programs. This proposed legislation compels educators to "examine the strengths and weaknesses of such programs, particularly with regard to reaching different age and socio-economic groups in communities served." Bills under consideration in both Houses of Congress advocate sustained levels of public financing for drug education and research through 1976.

It is interesting to examine what events catalyzed this interest among policymakers and legislators in holding educators accountable for the methods used and the outcomes sought in educating about drugs. Public awareness of youthful drug use and the outlay of millions of dollars for school prevention programs began in 1967. The primary prevention focus concentrated solely on the cognitive aspects of the drug abuse problem. Such an approach,

mistakenly, tends to ignore the affective and behavioral components of learning and social behavior. The term "risk education" appropriately describes the predominant genre of prevention programs implemented between 1967 and the present. To quote the *Second Report of the National Commission on Marihuana and Drug Abuse,* "an important assumption (in our use of "risk education" as a prevention tool) is that if people are educated about the risks of drug taking, they will not use drugs. It is presumed that presentation of information regarding dangers and risks can quiet curiosity and the desire for anticipated pleasant psychological sensations, the factors which account for most individual drug experiences."

Beginning in the late 1960's researchers began to question the ability of drug education to influence drug-using attitudes and behavior simply by increasing a person's knowledge about drugs. Dr. John Swisher and his colleagues reported an important conclusion. the more students know about drugs, the more likely they are to hold attitudes favoring the use of drugs. The results of many similar studies provided evidence that information alone is a flimsy tool in discouraging the use of substances. Further, the varieties of "one-shot," single focus drug education efforts, when evaluated, have no impact on attitudes regarding use or drug use behavior. In more recent cases, these informational programs are reported to have increased student drug experimentation and use by causing more relaxed attitudes about drug effects.

The relationship between knowledge and behavior has always been a question of special interest to social psychologists. Do people with superior knowledge usually act on the basis of that knowledge? There is growing evidence that drug users are more knowledgeable than non-users, and that knowledge about drugs is associated with actual use of drugs.

Existing evaluative studies also offer direction in deciding which drug education methods hold promise for school prevention programs. In 1971 Drs. John Swisher and Richard Warner, Jr. measured the effects of three group counseling approaches on the drug-related knowledge, attitudes and behavior of high school and college-aged students. Their results emphasize the relative ease of increasing student knowledge, and the often underestimated complexity of altering drug attitudes and behavior. The studies also support further investigation of "rei groups" which utilize non-drug-using role verbally reinforce discussions about reasons

Among the ninth and eleventh graders found a high correlation between personal d drug use. They, therefore, suggest that programs might maximize peer group reinf members of existing social groups in couns discussing drug use and related social issues.

Drug education research underscores process in reinforcing relevant responses re both legal and illegal drugs. Drug use is gene phenomenon; reinforcement begins with exposure to drugs via his peer group, and throughout his involvement with drugs in Swisher and Crawford in 1971 found that group "rap session" increased drug knowle is their conclusion that drug knowledge g session" was apt to be more meaingful sin group itself. Accordingly, the researchers su group sessions would have even greater i people and adults as participants.

Dr. Norman Zinberg and his colleagues do participatory peer group sessions in approa behavior like drug use. Dr. Zinberg, in the la group-oriented experiment in junior and Through this "Social Education" program "young people participated in a give-and-ta rather than simply accepting or rejecting th dictum." Dr. Zinberg reports that stude closer to their real concern, which was not feeling that no one cares about anyone else.

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Among the ninth and eleventh graders, Swisher and Warner found a high correlation between personal drug use and peer group drug use. They, therefore, suggest that future drug education programs might maximize peer group reinforcement by involving members of existing social groups in counseling sessions aimed at discussing drug use and related social issues.

Drug education research underscores the benefit of group process in reinforcing relevant responses regarding personal use of both legal and illegal drugs. Drug use is generally viewed as a group phenomenon; reinforcement begins with an individual's first exposure to drugs via his peer group, and is believed to continue throughout his involvement with drugs in varying group settings. Swisher and Crawford in 1971 found that a short-term informal group "rap session" increased drug knowledge. Of special interest is their conclusion that drug knowledge gained during the "rap session" was apt to be more meaingful since it evolved from the group itself. Accordingly, the researchers suggest that longer-term group sessions would have even greater impact on both young people and adults as participants.

Dr. Norman Zinberg and his colleagues documented the value of participatory peer group sessions in approaching matters of social behavior like drug use. Dr. Zinberg, in the late 1960's, supervised a group-oriented experiment in junior and senior high schools. Through this "Social Education" program it was observed that "young people participated in a give-and-take struggle with peers rather than simply accepting or rejecting the weight of a teacher's dictum." Dr. Zinberg reports that students moved closer and closer to their real concern, which was not drugs per se, but their feeling that no one cares about anyone else.

Other studies shed light on the selection of credible resource people and promising techniques as well. In an OEO-sponsored experiment, ex-addict "teachers" were utilized as instructors in training teachers and educating students about drugs. During the program it is reported that students acquired increased knowledge as well as more cautious attitudes about drug use. Program observers attribute this phenomenon, in part, to student admiration of, and

teacher interest in, ex-addict accounts of personal drug experiences, as well as the "cool" image the ex-addicts projected. Many questions remain unanswered about the degree of student identification with reformed drug users and the specific impact of their involvement, however.

Studies in Michigan and California further show that students prefer ex-addicts and medical personnel as resources in drug programs. According to Dr. Louise Richards, "the remaining (student) resource preferences, in order, were police, teachers, and other students. The students also had preferences for types of instruction. The discussion method was their first choice. Other preferred instruction methods, in order, were the visual media, research and listening." The students' preference for discussion should, perhaps, be related to Dr. Swisher's discovery that personal group experiences tend to decrease drug use among the students involved.

The active participation of young people as evaluators is an under-utilized asset in drug education planning and evaluation. As discussed in Chapter 10, expanded student involvement could provide valuable direct assessments of the actual attitudes and responses of drug education program consumers.

Various studies are also underway to examine and validate the usefulness of specific drug prevention approaches. Seminal work has been undertaken to show the relationship between minority cultural identity and related attitudes regarding drug use; the value of socio-psychological approaches in helping students clarify their perceptions of drug use as it relates to various forms of escape behavior, and the behavioral impact of programs offered as alternatives to drug experiences.

In addition, the future promises rich returns on our investments in longitudinal drug prevention studies of various age groups. Dr. Richard Blum and Associates at Stanford University have initiated a comprehensive three-year study of psychoactive drug use patterns among suburban youth from grades 5 through 12. Results will provide important data on what kind of child begins what kind of drug use, when, what happens over a two-year period, and how different drug education methods affect that use.

The Institute for the Study of Drug Dependence in London is gathering data on 7000 children in 90 schools measuring changes in attitudes, intentions, images of dru perceive themselves in relationship to contribute an important cross-cultural analyses of drug prevention research.

This handbook is based on the assum toward better drug education require standing on the part of teachers and adr and "why's" of the evaluative process, for more effective learning. Based on drug programs can strive to accomplish, tors should examine many of the q manual, such as evaluation managemer mental designs in evaluation, optional use, student involvement in research, knowledge in planning more effective dr

STRUCTURE OF THE H

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ex-addict accounts of personal drug experi-
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nswered about the degree of student identifi-
drug users and the specific impact of their
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n and California further show that students
d medical personnel as resources in drug
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eferences, in order, were police, teachers, and
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This handbook is based on the assumption that further progress toward better drug education requires a much clearer understanding on the part of teachers and administrators of the "how's" and "why's" of the evaluative process, especially as a foundation for more effective learning. Based on an understanding of what drug programs can strive to accomplish, educators and administrators should examine many of the questions addressed in this manual, such as evaluation management, the use of basic experimental designs in evaluation, optional test instruments and their use, student involvement in research, and the utilization of new knowledge in planning more effective drug programs.

STRUCTURE OF THE HANDBOOK

The handbook is divided into three major sections. Following the Introduction and Overview is Section One entitled "Decision-Making in Research." Within this initial section are chapters discussing five primary areas of concern for those planning evaluation.

Chapter 1, "Specifying Objectives," by John Swisher and Annette Abrams, elaborates on a number of program objectives and goal-setting considerations for drug education planners. Chapter 2, "Evaluation Management," by Richard Blum and Emily Garfield, addresses many important logistical problems faced by administrative managers of research. Chapter 3, "Basic Experimental Designs," by John Horan, facilitates the selection of an appropriate drug education research design. Dr. Horan discusses the advantages and disadvantages of three types of experimental designs: inappropriate, appropriate and questionable. This chapter concludes with a brief explanation of statistical analysis methods recommended for use with the appropriate designs discussed. Chapter 4, "Research. An Evolutionary Perspective," by Richard Warner, Jr., offers abstracts of 17 drug education programs and concomitant research findings. The author divides program abstracts into four categories depending

upon the appropriateness of the research design used and thus the validity of the results reported. Chapter 5, "Pitfalls in Data Collection," by Donald Jones, calls attention to possible distortions which can occur through the data collection process. Mr. Jones comprehensively discusses the fundamentals of data collection, including issues like experimenter effect; the selection and training of interviewers; and planning guidelines for the prevention of bias.

Section Two of the handbook is entitled "Measures for Drug Education." This section presents a series of reliable measures for drug education programs, an orientation for effective use of the sample instruments as well as a discussion about locating additional measures. Chapter 6, "Stanford University Evaluation Scales," by Emily Garfield and Richard Blum, describes two instruments for use with young children and adolescents. This chapter also provides insights on the structure of the Stanford University research project. Chapter 7, "Pennsylvania State University Evaluation Scales," by John Swisher and John Horan, describes a series of scales for use with secondary school, college and adult audiences. Chapter 8, "Affect and Cognition in Drug Education," by John Strandmark, presents a thorough discussion of "confluent" drug education which merges affective and cognitive orientations. Mr. confluent education by describing various by drug educators. Chapter 8, finally, suggested scales for use in assessing affective

Section Three, "Analysis and Interpretat the final stages of research planning. Ch Boons and Boondoggles," by Ross Good confronts practical questions concernin usage. Goodell and Gruman consider the computers, assistance from computer sp computer costs, computer terminology, obt from the computer. Chapter 10, "Consum Evaluation Results," by Annette Abrams, u student involvement in drug education parallels student evaluation findings with for planning. Chapter 10 also defines va involvement, describes two model student enumerates student findings regarding drug "Program Planning Dimensions," by Joh several basic considerations for those who a based on research results. The dimensions p readers instituting new drug education effor

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affective and cognitive orientations. Mr. Strandmark clarifies confluent education by describing various teaching strategies used by drug educators. Chapter 8, finally, includes an array of suggested scales for use in assessing affective program impact.

Section Three, "Analysis and Interpretation of Data," addresses the final stages of research planning. Chapter 9, "Computers: Boons and Boondoggles," by Ross Goodell and Allen Gruman, confronts practical questions concerning effective computer usage. Goodell and Gruman consider the location of accessible computers, assistance from computer specialists, estimation of computer costs, computer terminology, obtaining and storing data from the computer. Chapter 10, "Consumer Feedback: Student Evaluation Results," by Annette Abrams, underscores the value of student involvement in drug education research. The author parallels student evaluation findings with related considerations for planning. Chapter 10 also defines various levels of student involvement, describes two model student research projects, and enumerates student findings regarding drug education. Chapter 11, "Program Planning Dimensions," by John Swisher, delineates several basic considerations for those who are modifying programs based on research results. The dimensions presented have value for readers instituting new drug education efforts as well.

Section One

DECISION-MAKING IN RESEARCH

1

Specifying Objectives

by

John D. Swisher and L. Annette Abrams

INTRODUCTION

This chapter discusses various objectives derived from drug education programs currently operating in schools and agencies across the country. These objectives are intended to be representative of the kinds of goals drug education programs are striving to accomplish. No single program could succeed in incorporating all of these objectives. Conversely, the adoption of any one objective does not necessarily result in a measurably effective program. By presenting discussions of the most prevalent program aims, it is hoped that readers will approach the goal selection task more knowledgeably and more critically.

THE PROCESS OF GOAL-SELECTION

Most drug education programs fail to operate according to clearly specified goals, with built-in criterion measures for evaluation and mechanisms for instituting change when the program begins to veer off course. Drug educators and administrators have difficulty defining both the nature of the problem and the goals sought. This may explain why many drug education evaluations often address objectives that are tangential to the program's potential for implementation.

Realistic, precise goal-setting should always precede deliberations about the more technical aspects of evaluation. Accordingly, this handbook commences its discussion of program research by encouraging the reader to begin the evaluation process by considering and specifying the program objectives to be measured.

Goal-setting should begin by assessing what the target audience *needs* from the school in the way of drug-related learning or special programs. Second is the development of an inventory of resources (i.e., personnel having appropriate expertise, available facilities, etc.) available for use in meeting the student's drug needs. Lastly, *prioritizing* occurs—a series of comparisons should be made concerning which needs will be met and in what order. This final step is usually the most difficult: setting definite priorities, deciding precisely which needs the program will attempt to address and which will have to be ignored, etc. Essentially, this

final phase requires decisions about what the program emphasis will be, i.e., what the specific objectives are.

The development of a statement outlining these program objectives will eventually lead to adjunctive decisions about the nature of program activities, relevant approaches and resources to be utilized in achieving the objectives. These questions warrant consideration only after objectives have been identified and agreed upon by the administrator, educator, and researcher involved.

At this point in the goal-setting and planning process, a number of essential questions will have been confronted, such as:

- What are the needs of the target (student) audience?
- What resources are available to meet those needs?
- Which needs will take priority and thus, will be addressed by the program? (i.e., What are the program objectives?)
- In which order will these objectives be addressed?
- How will these objectives be met?
- By whom will objectives be met? With what kinds of support? Over what period of time? And so on.

By specifying objectives early in the program planning process, the researcher, educator and administrator are better able to consider their assessment of program outcomes. On a practical level, clarifying program goals has the added advantage of preventing staff confusion, imprecise goal statements often confuse staff members who can misinterpret stated goals and may, as a result, pursue divergent goals. This situation is especially disastrous when teachers, primary transmitters of educational program intentions, pursue goals considered by them to be appropriate, but which in fact do not align with the program's stated goals. This debilitating gap between professed aims and actual practices can often be eliminated by specifying objectives clearly and early in the game.

In working toward an ultimate goal (i.e., to affect drug use behavior), specific objectives must be met along the way. Following is a list of objectives discussed in this chapter. Undoubtedly, one or more of them will be relevant to readers' programs.

Level One Program Objectives

- To increase an individual's knowledg
- To affect an individual's attitudes sumption of drugs
- To alter an individual's drug use beha

Level Two Program Objectives

- To increase an individual's participati
- To clarify an individual's values
- To improve an individual's decision-m
- To improve an individual's self conce

HOW TO USE THIS CHA

Level One objectives are considered bas effort related to drug abuse. It is expected will attempt to achieve an impact on drug and/or behavior, in varying degrees, depend specified.

Level Two objectives, however, are le uniquely as "drug" program goals. They f and his needs; they can be categorized a goals. Level Two objectives for drug educa have, in addition to a concern for the in secondary interest in affecting the individ attitudes and/or use behavior. With few ex ship between drug attitudes and use, an impact has not been adequately researche objectives are believed promising for dru acknowledged in this chapter for further testing. (For a more thorough explanation o tion program components, see Chapter 8.)

For each objective listed, it is suggeste relevancy choice which is appropriate for y (i.e., "very relevant" for a program's prim

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Level One Program Objectives

- To increase an individual's knowledge about drugs
- To affect an individual's attitudes toward personal consumption of drugs
- To alter an individual's drug use behavior

Level Two Program Objectives

- To increase an individual's participation in alternatives
- To clarify an individual's values
- To improve an individual's decision-making skills
- To improve an individual's self concept

HOW TO USE THIS CHAPTER

Level One objectives are considered basic to any educational effort related to drug abuse. It is expected that school programs will attempt to achieve an impact on drug knowledge, attitudes, and/or behavior, in varying degrees, depending upon the priorities specified.

Level Two objectives, however, are less often characterized uniquely as "drug" program goals. They focus on the individual and his needs, they can be categorized as "affective" program goals. Level Two objectives for drug education programs usually have, in addition to a concern for the individual, a primary or secondary interest in affecting the individual's drug knowledge, attitudes and/or use behavior. With few exceptions, the relationship between drug attitudes and use, and Level Two program impact has not been adequately researched. Because Level Two objectives are believed promising for drug education, they are acknowledged in this chapter for further experimentation and testing. (For a more thorough explanation of affective drug education program components, see Chapter 8.)

For each objective listed, it is suggested that you check the relevancy choice which is appropriate for your particular program (i.e., "very relevant" for a program's primary objective; "some-

what relevant" for secondary or incidental objectives; and "not relevant" for those objectives which do not apply). Following each stated objective are brief comments about its attainability as a goal based on reported research and, especially in Level Two, professional opinions in the field.

Field tested instruments have been suggested for consideration by those wishing to measure Level One objectives. Level Two objectives often lack both the research data and appropriate instrumentation required to make concrete statements about their relevancy for drug education. Nevertheless, these latter goals are considered by many to offer promise for future school programs. It is hoped that their inclusion in the handbook will increase their future utility for planners and evaluators.

LEVEL ONE OBJECTIVES

To Increase an Individual's Knowledge About Drugs

_____very relevant

_____somewhat relevant

_____not relevant

Increasing knowledge about drugs has been the most common goal for drug education programs in the past. There is now accumulating evidence, however, indicating that programs built solely around this cognitive objective will have little or no impact on an individual's drug attitudes or his use of drugs (Swisher et al., 1970; Wicker, A. W., 1969). Further, it is believed that exposure to programs focusing on drug information alone may, in fact, increase an individual's willingness to experiment with various drugs (Richards, 1969).

Knowledge-oriented ("traditional") programs frequently assume that an inverse relationship exists between drug knowledge and drug use. It follows, then, that such programs also believe that increasing a student's knowledge about drugs will subsequently decrease the student's willingness to decide in favor of drug use. They assume that if people are educated about the risks of drug taking they will not use drugs. This thinking ignores past research concerning educational campaigns focus hol. Like drug education, these approac power of information alone to alter attit

Regardless of how one interprets the disseminating factual information about insufficient goal for drug education prog that cognitive goals should be disre educ.tion. On the contrary, informa program component. It is generally a "ignorance of drug effects may be more of drugs" (Korn and Goldstein, 1972 information must be transmitted, but insufficient prevention tool.

Suggested Measures

- Grades K-4: Stanford University view - Chapter 6, Part Two
- Grades 5-12: Stanford Univ Questionnaire - Chapter 6, Part O
- Grades 7-12: Pennsylvania Stat Scale - Chapter 7, Part One
- College students and adults: Pen Knowledge Scale - Chapter 7, Par

To Affect an Individual's Attitudes Towa the Personal Consumption of Drugs

_____very relevant

_____somewhat relevant

_____not relevant

This objective suggests that an indi willingness to use drugs following part attitude-oriented program. A small num fact, demonstrated that attitude shifts oc efforts (Carney, 1972). It is important these programs were specifically design

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EVEL ONE OBJECTIVES

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d ("traditional") programs frequently assume onship exists between drug knowledge and then, that such programs also believe that knowledge about drugs will subsequently willingness to decide in favor of drug use. people are educated about the risks of drug se drugs. This thinking ignores past research concerning educational campaigns focused on tobacco and alcohol. Like drug education, these approaches relied on the assumed power of information alone to alter attitudes and behavior.

Regardless of how one interprets the existing research, simply disseminating factual information about drugs is a necessary, but insufficient goal for drug education programs. This is not to imply that cognitive goals should be disregarded in planning for education. On the contrary, information is a valuable *basic* program component. It is generally agreed, for example, that "ignorance of drug effects may be more widespread than the use of drugs" (Korn and Goldstein, 1972). Clearly, then, factual information must be transmitted, but information alone is an insufficient prevention tool.

Suggested Measures

- Grades K-4: Stanford University Drug Evaluation Interview - Chapter 6, Part Two
- Grades 5-12: Stanford University Drug Evaluation Questionnaire - Chapter 6, Part One
- Grades 7-12: Pennsylvania State University Knowledge Scale - Chapter 7, Part One
- College students and adults: Pennsylvania State University Knowledge Scale - Chapter 7, Part One

To Affect an Individual's Attitudes Toward the Personal Consumption of Drugs

_____very relevant

_____somewhat relevant

_____not relevant

This objective suggests that an individual will indicate less willingness to use drugs following participation in a successful attitude-oriented program. A small number of programs have, in fact, demonstrated that attitude shifts occurred as a result of their efforts (Carney, 1972). It is important to note, however, that these programs were specifically designed to influence attitudes

alone. Few, if any of them, have reported subsequent influences on student drug use behavior.

Attitudinal objectives require careful consideration as they relate to desired outcomes. Thought must be given to that part of the total program which is expected to influence an individual's intentions to use drugs. For example, it is often erroneously presumed that increased knowledge will alter drug-related attitudes. Attitudes, however, are not necessarily influenced by facts. Instead, attitudes seem to influence how facts are perceived.

It should be stated that there are other attitudinally-oriented objectives of interest to drug education programs, including:

- To create "healthy" attitudes toward personal consumption[3]
- To affect an individual's attitudes about drug users
- To influence a user's intentions to continue using drugs

In summary, little concrete research data exists which definitively correlates attitude shift and drug use behavior.

Suggested Measures:

- Grades K-4: Stanford University Drug Evaluation Interview - Chapter 6, Part Two
- Grades 5-12: Stanford University Drug Evaluation Questionnaire - Chapter 6, Part One
- Grades 7-12: Pennsylvania State University Attitude Scale Chapter 7, Part Two
- College students and adults: Pennsylvania State University Attitude Scale - Chapter 7, Part Two

[3] Stated objectives often include arbitrary terms like "healthy," "appropriate," "proper," "rational," or "good" which are intended to clarify the program's goals. On the contrary, such terms are rarely adequately defined. Consequently, *stated goals* frequently lack the necessary specificity; such terms often represent value judgments which add confusion to program research endeavors requiring quantifiable goals.

At one extreme, "healthy" or "good" traditionally refers to anti-drug attitudes, i.e., an abstinence goal is implied. Conversely, "unhealthy" or "bad" usually represents pro-drug attitudes.

To Alter an Individual's Drug Use Behavior

_____very relevant

_____somewhat relevant

_____not relevant

To date no program has been able to actually preventing drug use, i.e., stopping of drugs. Some experts note that, altho objective in the abstract, it is undoubtedly an education program. Considering all obj the most difficult to define and to achie difficulty seems to rest with the issue selective use of drugs (because the latter o program anticipates, and will tolerate, a s of some substances).

An array of possible behavioral goals objective. They include:

- Stopping all experimentation with
- Keeping experimentation at the m to relatively safe[4] substances
- Preventing casual users from becom
- Reinforcing the anti-experimentat who have not yet tried drugs
- Preventing addiction or severe depe

Suggested Measures

- Grades K-4: Stanford University view - Chapter 6, Part Two
- Grades 5-12: Stanford Univer Questionnaire - Chapter 6, Part On

[4] "Safe" usually refers to non-addictive substances. A require explicit definition if they are to be maximally us

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Conversely, "unhealthy" or "bad" usually represents

To Alter an Individual's Drug Use Behavior

_____very relevant

_____somewhat relevant

_____not relevant

To date no program has been able to demonstrate success in actually preventing drug use, i.e., stopping experimentation or use of drugs. Some experts note that, although this is a desirable objective in the abstract, it is undoubtedly an unrealistic goal for an education program. Considering all objectives, this is probably the most difficult to define and to achieve programatically. One difficulty seems to rest with the issue of total abstinence vs. selective use of drugs (because the latter objective implies that the program anticipates, and will tolerate, a slight increase in the use of some substances).

An array of possible behavioral goals are associated with this objective. They include:

- Stopping all experimentation with foreign substances
- Keeping experimentation at the minimum and limiting it to relatively safe[4] substances
- Preventing casual users from becoming habitual users
- Reinforcing the anti-experimentation tendencies of those who have not yet tried drugs
- Preventing addiction or severe dependence

Suggested Measures

- Grades K-4: Stanford University Drug Evaluation Interview - Chapter 6, Part Two
- Grades 5-12. Stanford University Drug Evaluation Questionnaire - Chapter 6, Part One

[4] "Safe" usually refers to non-addictive substances. As mentioned earlier, stated goals require explicit definition if they are to be maximally useful in program assessment.

- Grades 7-12: Pennsylvania State University Drug Use Scales - Chapter 7, Part Three
- College students and adults: Pennsylvania State University Drug Use Scales - Chapter 7, Part Three

LEVEL TWO OBJECTIVES

To Increase an Individual's Participation in Behavioral Alternatives to Drug Use

_____very relevant

_____somewhat relevant

_____not relevant

It is imperative to recognize that the use of drugs has many straightforward rewards for the user. These rewards take various forms (including peer acceptance, pleasurable altered states of consciousness, satisfaction of curiosity, stimulation, relaxation, and so on). In order to counteract these powerful reinforcers, it is necessary to provide equally pleasurable behavioral alternatives. In the last analysis, individuals do not reject mood-altering substances or pleasure-seeking behavior until they discover something as good or better.

Many researchers have theorized that individuals who are motivated to participate in behavioral alternatives will tend to use fewer drugs. This objective necessitates that both the school and community plan and provide appealing alternatives for young people and adults.

This objective is currently based on principles of human behavior and mental health approaches which focus on factors such as heightened personal and interpersonal awareness, utilization of vocational skills, social and political involvement, and varied personal experiences (Dohner, 1972). Conceptually, a belief in the merit of alternatives assumes that undesirable behavior (i.e., drug use) can be prevented by diverting the individual's attention toward a more acceptable alternatives to be acceptable and attract must meet the following criteria:

1) They must contribute to indiv pendence
2) They must offer active participati
3) They must offer a chance for com
4) They must provide a feeling of larger body of experience
5) Some of the alternatives offered non-cognitive and the intuitive

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The challenging aspects of this obj marized by Kenneth Keniston: "In the are critical of student drug abuse students that there are better and more the fullness, the depth, the variety an that of ingesting psychoactive ch expansion seems to me not the sole p compounds, but of education in its 1967).

Exploration of this objective has, so to experiences believed to resemble dr cendental meditation, yoga, etc. Progra ties should reflect a wider range of hur Further experimentation and reliable alternative programs are needed. Such strate a relationship between an in alternative pursuits and subsequent ch and/or drug use behavior. At present, recommended for measurement of th authors further encourage readers who goal to attempt systematic measurement utilized.

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EVEL TWO OBJECTIVES

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1) They must contribute to individual identity and independence
2) They must offer active participation and involvement
3) They must offer a chance for commitment
4) They must provide a feeling of identification with some larger body of experience
5) Some of the alternatives offered should be in the realm of non-cognitive and the intuitive

(Chanon, 1969; Cohen, 1971)

The challenging aspects of this objective are eloquently summarized by Kenneth Keniston: "In the long run those of us who are critical of student drug abuse must demonstrate to our students that there are better and more lasting ways to experience the fullness, the depth, the variety and the richness of life than that of ingesting psychoactive chemicals . . . Consciousness-expansion seems to me not the sole prerogative of psychoactive compounds, but of education in its fullest sense" (Keniston, 1967).

Exploration of this objective has, so far, generally been limited to experiences believed to resemble drug experiences, i.e., transcendental meditation, yoga, etc. Programatically, alternative activities should reflect a wider range of human needs and experiences. Further experimentation and reliable evaluation of behavioral alternative programs are needed. Such evaluation must demonstrate a relationship between an individual's involvement in alternative pursuits and subsequent changes in his drug attitudes and/or drug use behavior. At present, no specific scales can be recommended for measurement of this objective. However, the authors further encourage readers who designate this a "relevant" goal to attempt systematic measurement of the impact of techniques utilized.

To Enhance an Individual's Ability to Clarify His Values

_____very relevant

_____somewhat relevant

_____not relevant

Values clarification is considered by many to be one of the most promising approaches to emerge in drug education so far. Raths, Harmin and Simon (1966) synthesized the first theory of value-oriented teaching for use in the schools. Their methodology, described more thoroughly in Chapter 8, advises educators to concentrate on the *process* used by students in obtaining their values (as opposed to focusing on the value *outcomes* of each individual's experiences).

According to Raths and his colleagues, values are guides to behavior which evolve from a person's experiences. Today's youth, exposed to a lifetime of 20th century inconsistencies and fading value systems, find it increasingly difficult to develop clear values of their own. Today's complex array of choices (inclusive of drugs and other controversial social behavior decisions) makes the act of choosing even more difficult. Consequently, many so-called "problem young people" are having serious trouble developing their values, a necessary process for achieving an integrated life. Teachers and schools, based on this methodology, are helping young people clarify those processes which might be effective in developing their values.

Other drug programs, labelled as values clarification programs, include modified approaches to the valuing process described above. It is important to distinguish between the *process of valuing* as a goal, and the instilling of particular "acceptable" values in the student as a means to prevent non-desirable behaviors like drug use. The well-known Coronado values program, for example, reports that "The crux of the drug abuse problem lies in the area of incentives." Accordingly, the program has "identified ways to raise the incentive *values* of other behaviors relative to (the *value* of using drugs). If drug abuse is seen to be of very little . . . value, then it will not be the behavior chosen . . . the student will know that other behaviors have greater incentive value" (Brayer and Carney, 1971).

Evaluations of this objective must, ther
the valuing theory underlying the progra
clarification" programs, variously defined, i
becomes imperative that programmatic dis
Research should document correlations b
drug use as affected by exposure to a values

General research on the valuing process i
in *Values and Teaching* (1966); see Chapte
discussion of this objective and recom
affective program components.

To Improve an Individual's Decision-Makin

_____very relevant

_____somewhat relevant

_____not relevant

Regardless of the "effectiveness" of drug
the age at which students are exposed to sc
at some point every individual is faced w
decision. Therefore, many programs seek
ual's ability to make better decisions reg
important life choices. Few programs focu
have defined their approaches; one assum
programs assist students in considering all
making process, especially the pros and c
Additionally, programs having a decisi
should allow for students who have decide
subsequently faced with choices about wh
how often and how much. Frequently, p
what for the most part are discrepant facts
involved in decision-making.

Some of the decision-making compone
education programs follow:

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[5] These components are appropriate for students wh
well as non-using students.

's Ability to Clarify His Values

nt

considered by many to be one of the
nes to emerge in drug education so far.
on (1966) synthesized the first theory of
or use in the schools. Their methodology,
hly in Chapter 8, advises educators to
ess used by students in obtaining their
ocusing on the value *outcomes* of each

nd his colleagues, values are guides to
m a person's experiences. Today's youth,
20th century inconsistencies and fading
reasingly difficult to develop clear values
mplex array of choices (inclusive of drugs
ocial behavior decisions) makes the act of
ifficult. Consequently, many so-called
" are having serious trouble developing
process for achieving an integrated life.
ased on this methodology, are helping
se processes which might be effective in

labelled as values clarification programs,
aches to the valuing process described
to distinguish between the *process of*
the instilling of particular "acceptable"
as a means to prevent non-desirable
he well-known Coronado values program,
"The crux of the drug abuse problem lies
s." Accordingly, the program has "iden-
ncentive *values* of other behaviors relative
rugs). If drug abuse is seen to be of very
will not be the behavior chosen . . . the
other behaviors have greater incentive
y, 1971).

Evaluations of this objective must, therefore, carefully define the valuing theory underlying the program's efforts. As "values clarification" programs, variously defined, increase in popularity it becomes imperative that programmatic distinctions be elucidated. Research should document correlations between the individual's drug use as affected by exposure to a values-oriented program.

General research on the valuing process in education is included in *Values and Teaching* (1966); see Chapter 8 for a more detailed discussion of this objective and recommended measures for affective program components.

To Improve an Individual's Decision-Making Skills

_____very relevant

_____somewhat relevant

_____not relevant

Regardless of the "effectiveness" of drug education programs or the age at which students are exposed to school prevention efforts, at some point every individual is faced with a personal drug use decision. Therefore, many programs seek to enhance the individual's ability to make better decisions regarding drugs and other important life choices. Few programs focusing on decision-making have defined their approaches; one assumes, however, that these programs assist students in considering all aspects of the decision-making process, especially the pros and cons of the drug issue. Additionally, programs having a decision-making orientation should allow for students who have decided to use drugs, and are subsequently faced with choices about which drugs to use, when, how often and how much. Frequently, programs simply present what for the most part are discrepant facts, ignoring the processes involved in decision-making.

Some of the decision-making components[5] included in drug education programs follow:

[5] These components are appropriate for students who have decided to use drugs as well as non-using students.

- Students desiring to use particular drugs are encouraged to discuss a wide variety of "substitute experiences" (non-chemical alternatives) which they would find equally attractive
- Exploration of the student's personal values, attitudes and beliefs as they relate to his decision to use drugs
- Consideration of student's personal style and self-image as they relate to his desire to use drugs
- Discussion of student's strengths and weaknesses (i.e., how student handles his feelings and moods) as they relate to his ability to avoid becoming dependent upon the drug(s) of choice
- Discussion of how student's personal goals (short range and long range) will be affected by the use of drugs
- Association is drawn between student's general willingness to take risks and the known risks associated with the drug of choice
- Exploration of peer pressure and authority pressure as they influence student's decision to use drugs
- Discussion of the impact that the student's drug taking will have on important others in his life (family members, friends, etc.)
- Designation of "advisors" from whom the student might seek advice and consultation regarding his drug decision
- Upon completion of the proces evaluate his final decision. At student considers the benefit mistakes

Research related to this objective is explore the correlation between a dec its effect on student drug attitudes and

To Improve an Individual's Self Concep

_____very relevant

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Many affective strategies assume tha likely to use or misuse drugs if his bas shifted in a more positive direction. Th that a poor self concept is characte individuals. Therefore, if an individ enhanced prior to his drug decision, likely to become involved with drugs.

Since these program assumptions h objective has implications for evaluatio demonstrate that an individual has m more positive self concept; at a later demonstrated that the individual with a has decreased his use of drugs. For a m this objective and suggested measures se

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of "advisors" from whom the student might
nd consultation regarding his drug decision

- Upon completion of the process, student is encouraged to evaluate his final decision. At this point, if appropriate, student considers the benefit of learning from one's mistakes

Research related to this objective is scant; evaluations should explore the correlation between a decision-making approach and its effect on student drug attitudes and drug use behavior.

To Improve an Individual's Self Concept

_____very relevant

_____somewhat relevant

_____not relevant

Many affective strategies assume that an individual will be less likely to use or misuse drugs if his basic feelings about self can be shifted in a more positive direction. They believe, in other words, that a poor self concept is characteristic of many drug using individuals. Therefore, if an individual's self concept can be enhanced prior to his drug decision, the individual will be less likely to become involved with drugs.

Since these program assumptions have not been tested, this objective has implications for evaluation. First, it is important to demonstrate that an individual has moved in the direction of a more positive self concept; at a later point in time it must be demonstrated that the individual with a more positive self concept has decreased his use of drugs. For a more thorough discussion of this objective and suggested measures see Chapter 8.

2

Evaluation Management

by

Richard H. Blum and Emily F. Garfield

INTRODUCTION

The management of educational research falls jurisdictionally i the domain of school administrators. It is the administrator wh directly confronts a series of decisions throughout the evaluatio process; these management decisions ultimately define the struc ture of the research, its long range usefulness, and the quality o internal relationships during the evaluation itself.

After deciding a program's goals, prior to more technica discussions of research design and analysis, myriad logistica questions which relate to the management of educational researc emerge for clarification. The considerations discussed in thi chapter have value for administrators as well as researchers an educators involved in the conduct of school-based research. In th context of implementation, research requires the cooperation o these individuals, each offering the benefit of his perspective an experience in shaping the research. Educators and researchers therefore, should be familiar with and sensitive to the nature o decisions inherent in evaluation management.

This chapter discusses many fundamental management ques tions beginning with the selection of research personnel (where t locate qualified researchers, recommended research skills require for those doing drug education research, etc.). The chapter als includes information on:

- How an administrator can prevent threat and resistanc to evaluation
- Internal or external placement of the evaluator
- Budgeting and cost questions
- Length of the evaluation
- Evaluation standards, priorities and ethics
- Use of the evaluation report and application of th findings

WHO EVALUATES?

Professional Skills Required

Selection of an evaluator requires decisions about the profe sional skills required. Choice of an evaluator is also determined b

the back-up facilities needed and the costs. The prime determinants of evaluator choice are. 1) size and complexity of the effort, 2) the ultimate objective(s) of the work. For example, if the evaluation is intended to measure change in the student, to monitor institutional records (school grades, arrests, mental health referrals, etc.), and to draw inferences about the relationship between these changes and the education program itself, an objective evaluator with special research training is needed. In this case, the ideal candidate would be trained in designing research, administrating change measures, processing raw data, interpreting and writing up the findings.

Such a comprehensive evaluation effort would probably require a team comprising many skills:

- Interviewing
- Constructing and administering attitude scales
- Applying and validating drug use measures
- Readying materials for a computer
- Applying statistical tests
- Coordinating efforts
- Administrating logistical and accounting work

The evaluator would be sought from a limited group of individuals with specialized training in group research. Since all researchers are not equally competent, one will seek out at least an average level of skill. If the work to be done is repetitive (i.e., following research designs previously developed and examining change-influencing variables already identified in this handbook), it is unlikely that an "outstanding" professional will be required.

Where to Locate an Evaluator

There are four major settings in which an evaluator might be found.

1. *Universities*—College or university departments of psychology, sociology, anthropology, graduate schools of business, or departments of education and their subdivisions of educational psychology would normally have many researchers. If there is a local medical school, members of the departments of psychiatry or public h College professors are usually famil literature and are often motivated to will have access to student assistants departments (e.g., statisticians) wh consult on special problems.

2. *Private research institutes and corp* research is done by private businesses corporations or corporate branch behavioral science and educational r private or semi-private research ins research on a non-profit basis. For national listing of such corporations, telephone directory may be conside discovering which firms are availab directory, for example, lists the follo Factors Research," "Marketing Re "Survey Reports," "Research and E Development." Just as a physician by telephone roulette, random draw from the telephone directory has its ing your options, you should m recommendations from previous clie proposals. These recommendations a examined on the basis of their comp procedures.

3. *Government agencies*—Government behavioral science researchers are Frequently, the agencies themselves o school systems. Public health depar mental health programs at the city obvious places to make inquiries. division or a drug education and ponent, your educational evaluation

   Inquiries might also be made at th National Institute of Mental Health. able to provide initial consultation on identify public mental health progr

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departments of psychiatry or public health may be qualified. College professors are usually familiar with the scientific literature and are often motivated to conduct research. They will have access to student assistants and colleagues in other departments (e.g., statisticians) who can be called in to consult on special problems.

2. *Private research institutes and corporations*—Much applied research is done by private businesses. Most major cities have corporations or corporate branch offices specializing in behavioral science and educational research. There are also private or semi-private research institutes which conduct research on a non-profit basis. For lack of a centralized national listing of such corporations, the yellow pages of the telephone directory may be considered a starting point in discovering which firms are available. The San Francisco directory, for example, lists the following headings: "Human Factors Research," "Marketing Research and Analysis," "Survey Reports," "Research and Education Planning and Development." Just as a physician or lawyer is not chosen by telephone roulette, random drawing of research groups from the telephone directory has its limitations. In narrowing your options, you should make inquiries, require recommendations from previous clients, and request written proposals. These recommendations and proposals should be examined on the basis of their comprehension of evaluation procedures.

3. *Government agencies*—Government agencies which employ behavioral science researchers are sources of evaluators. Frequently, the agencies themselves offer research services to school systems. Public health departments and community mental health programs at the city and county levels are obvious places to make inquiries. If they have a research division or a drug education and treatment service component, your educational evaluation might be integrated.

   Inquiries might also be made at the regional offices of the National Institute of Mental Health. NIMH offices should be able to provide initial consultation on the research and might identify public mental health programs in your locale. (A

listing of NIMH regional offices is included in the Appendix at the end of this chapter.)

4. *Educational system*—A fourth place to look for program evaluators is within the educational system itself, either at local, regional or state levels. School psychologists are experts in tests and measurement. You should also consider trained drug educator/researchers and education research workers within the state office of education.

Who Seeks the Evaluator?

If the school system is responsible for conducting drug education, then the impetus for seeking evaluation should come from within the system. The push for evaluation, however, might not come from those in charge of drug education, but from outside. Examples: a parents' association fearing that drug education is stimulating an interest in drugs, a taxpayers' group believing that drug education is costing too much and producing too little; university educators who are interested in learning how children perceive the purposes and content of drug education. The platform from which an evaluation request is launched makes a difference. The catalyzing group often determines an evaluation's explicit and hidden goals, as well as the administrative arrangements and political problems.

A common situation occurs when the group desiring the evaluation is also charged with running the drug education program. If funds or in-kind services (personnel, facilities, etc.) are available, then there is usually not an administrative problem in obtaining permission to enter the classroom, test students and evaluate materials. However, the possibility exists of resistance from other individuals who may not want educational effects measured. Teachers are sometimes threatened by evaluation because it may show their teaching to be ineffective, or angry students may believe that evaluators are prying into their private lives through drug use questionnaires. The administrative process of funding and hiring an evaluator is routine *if* the power to grant access to classrooms and students remains in the hands of those selecting the evaluator.

Conversely, if the pressure for evalu
without power to grant access, e.g., p
critics or scholars, the school administra
to allow the evaluation. If allowed, the
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selection of the evaluator. *If the choice*
made by the critics, would they choose so
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resolution bargaining procedure? If tho
realize the conflicts involved and make
their assumptions explicit, then they
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Threat and Resistance to Evaluation

Emotional reactions to the evaluatio
earlier, are likely to occur. People often
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evaluator himself may be perceived as da
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Hypothetically, the educator may
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Should the educator perceive the threa
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Conversely, if the pressure for evaluation comes from those without power to grant access, e.g., parents, taxpayers, other critics or scholars, the school administrator must decide whether to allow the evaluation. If allowed, the administrator must decide how much he will seek control of its approach, including the selection of the evaluator. *If the choice of evaluator were to be made by the critics, would they choose someone simply to provide the results they seek? If the choice were to be made by the school authorities, would they hire a defender instead of an objective evaluator? Should selection occur jointly as part of a conflict resolution bargaining procedure?* If those who hire the evaluator realize the conflicts involved and make their interests clear and their assumptions explicit, then they are on the road to the rational administration of an evaluation project.

Threat and Resistance to Evaluation

Emotional reactions to the evaluation process, as mentioned earlier, are likely to occur. People often come to believe that what they are doing is unquestionably right. The notion of bringing in someone to evaluate them and their program is a threat. The evaluator himself may be perceived as dangerous, for skepticism is his creed. Skepticism is basic to his science; his procedures are intended to prove that experimental findings occur only by chance. Evaluation may cause reactions of fear and resistance and anger.

Hypothetically, the educator may not at first notice the evaluator and perceive the implications of his task. Indeed, the educator may not respond until the findings are announced which show that drug education, by the measures used, is a "failure." The drug program educators, proven "worthless" by the research findings, may denounce the evaluator, his methods and his findings.

Should the educator perceive the threat of the evaluation before the research is finished, he might attempt to downgrade or to sabotage the effort. The threatened evaluator may then counteract by denouncing the uncooperative educators. All in all, the administrator should anticipate these kinds of difficulties and act to forestall them.

INSIDE OR OUTSIDE EVALUATORS?

There are many *roles* open to an evaluator, from beloved counselor to objective renderer of facts to demoniacal hatchet man. Decisions concerning the evaluator's role should be made in advance rather than emerge as a surprise during the evaluation. Central to this issue is the decision of whether the evaluator will occupy the insider's or the outsider's chair.

If the evaluator is hired as a staff person, in some form of consultancy, or is a staff member secunded from regular employment (such as a school psychologist) to the research post, he is considered an insider. Accordingly, he will know the various ideological/emotional interests bearing internally on drug education. Consequently, he may be tempted, because of his own friendships, biases and future ambitions, to take one side or another in the case of diversity or conflict. If the evaluator occupies an inside staff position, he may take a different view than the outsider of how the research should be conducted, how results are to be transmitted, and what results are potentially dangerous. As a rule, outside researchers remain relatively insensitive to these influences.

Administratively, placing the evaluator "inside" implies that he may proceed to set up the educational effort and its measurement. If the evaluator does his work well, there is little need for way-paving from the administrator. Conversely, outside evaluators have no entre and no regular working relations. Each door must be opened for them by the administrator to assure that the mechanics of their work are set in motion.

The insider is the administrator's responsibility. The administrator must, therefore, learn to live with the waves and swells generated by him. On the other hand, whatever the awkwardness of his interpersonal relations, the ouside evaluator is a stranger, so his failings can be discounted. The administrator can claim it is not his fault that an outsider should err.

Inside researchers must play by political rules. If the evaluation is a heated issue, they can hardly be expected to resist pressure in choosing their work course. In an overly heated environment the inside evaluator may be accused of partisanship and often, in fact, is tempted to bend.

Most evaluation results lead to trouble. realize that the inside evaluator will probab he is *objectively* evaluating the drug e evaluation is to be a routine part of drug ed of heat and pressure will determine where An administrative solution to this proble quasi-independence to the evaluator. Fo evaluator is positioned in a semi-immu protected from adverse responses if his reporting accurate. As a rule, organiza self-evaluation programs (intelligence and police departments, auditors in banks an control programs for medical laborato committees in hospitals, consumer rating s companies, etc.) create independent depar staff and promote them based on product of internal pressure are rare, however, fo the outside who maintain their external aff

EVALUATION MANAGEMENT

Budgeting and Costs

Evaluation costs money. Even volunte vision, materials and secretarial assistance. include a provision in the budget for an a do. Indeed, all service programs shou budgeted evaluation component and the necessary to contract for and house it.

What does an evaluation cost? Minima measure of change using inexpensive me self-report questionnaires) will include:

- Staff time and supplies needed t collect questionnaires on two occas
- Staff time to code the replies, inferences from the data

Much of the cost for evaluation research i of scientists, interviewers, statisticians, cod

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nust play by political rules. If the evaluation can hardly be expected to resist pressure in course. In an overly heated environment the e accused of partisanship and often, in fact,

Most evaluation results lead to trouble. Administrators should realize that the inside evaluator will probably encounter trouble if he is *objectively* evaluating the drug education program. If evaluation is to be a routine part of drug education, the likelihood of heat and pressure will determine where the evaluator is placed. An administrative solution to this problem is to assure at least quasi-independence to the evaluator. For example, the staff evaluator is positioned in a semi-immune slot where he is protected from adverse responses if his work is sound and reporting accurate. As a rule, organizations with routinized self-evaluation programs (intelligence and inspection bureaus in police departments, auditors in banks and corporations, sample control programs for medical laboratories, audit and tissue committees in hospitals, consumer rating staffs for merchandising companies, etc.) create independent departments for the research staff and promote them based on product quality. The problems of internal pressure are rare, however, for evaluators hired from the outside who maintain their external affiliations.

EVALUATION MANAGEMENT QUESTIONS

Budgeting and Costs

Evaluation costs money. Even volunteer staff requires supervision, materials and secretarial assistance. Administrators should include a provision in the budget for an assessment of what they do. Indeed, all service programs should include a regularly budgeted evaluation component and the management structures necessary to contract for and house it.

What does an evaluation cost? Minimal costs (for a one-time measure of change using inexpensive measures such as student self-report questionnaires) will include:

- Staff time and supplies needed to print, distribute and collect questionnaires on two occasions
- Staff time to code the replies, summarize and draw inferences from the data

Much of the cost for evaluation research is *personnel:* the salaries of scientists, interviewers, statisticians, coders and so on.

Computer and material costs can be accurately estimated. *Overhead costs* for offices and the like can easily be 50% on top of each research dollar. *Personnel benefits,* given current social security taxes, will be at least 16% added to every personnel dollar. Each region of the country has different salary rates for professionals and clerical personnel. In metropolitan areas, experienced research administrators/evaluators probably will not work for less than $18,000 to $20,000 a year; an interviewer for less than $7,000; or a clerk for less than $6,000.

Following are two examples of program costs associated with drug education evaluation projects:

Example A: The Stanford Drug Education Program (described in Chapter 6) costs about $100,000 per year. As part of the program. 1) instruments are created and validated; 2) all teaching is done (in elementary schools in two cities and high schools in two other cities) with a total of 3300 students in the program at any one time; 3) all teaching materials are screened and purchased as part of the research budget (using three different approaches for comparison). The program costs about $30 per student per year for all teaching, all subsidiary studies, and two rounds of testing (including some one-to-one interviewing) each year. This figure does *not* include school overhead costs (classrooms, administration, etc.). It *does* include all research overhead and staff benefits representing 65¢ for every dollar spent.

Example B: The Blackford Study in San Mateo County, California, involves the annual distribution (county-wide) of a questionnaire in the junior and senior high school classrooms. Ms. Blackford, based on past experience, estimates that she could process the questionnaires for approximately 30,000 students for 30¢ ADA (average daily attendance) per student. This figure is based on a uniform method of distribution with schools administering their own questionnaires and returning the collected data.

One recommended way to determine the price of evaluators is to put out a request for proposal (RFP) and to compare bids. By all means compare the content of the research proposals as well. Some firms, for example, have admirable research credentials but lack experience in evaluating education of special concern to those seeking help having an affective orientation. Whoeve offer a proven sensitivity to the goal teaching approach(es) of the program t when considering minority firms to eva minority clients (students and adults); evaluating educational programs for m bring a unique sensitivity to their wo Such cases still require objective exa parison with competing firms.

One Shot or Continuing Evaluation?

This is one of the most important m it is answered determines *who* does the one extreme, the "one shot" evaluatio evaluator comes in, runs his own d assesses one in operation to see if it wo criterion of efficacy such as 10% redu self-reported by students and then rend

Conversely, in the "evaluation-as-fee the evaluator and the drug education permanent parts of the system. The evaluator is supposed to make ob according to some criterion of wor educators so that they may incorporat The program, as such, is neither eva evaluator can assess teaching technique the effectiveness of program content "evaluation-as-feedback" program requi an interlocking structure of working r who watch and those who do.

Decision-Making: Standards and Priorit

Decision-making standards should undertaking an evaluation. These standa with the definition of objectives a political environment. It requires that t

material costs can be accurately estimated. offices and the like can easily be 50% on top of ar. *Personnel benefits,* given current social be at least 16% added to every personnel of the country has different salary rates for erical personnel. In metropolitan areas, exper- ninistrators/evaluators probably will not work 00 to $20,000 a year; an interviewer for less erk for less than $6,000.

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d way to determine the price of evaluators is t for proposal (RFP) and to compare bids. By the content of the research proposals as well. mple, have admirable research credentials but lack experience in evaluating educational programs. This caveat is of special concern to those seeking help in assessing drug programs having an affective orientation. Whoever does the research should offer a proven sensitivity to the goals, intended outcomes and teaching approach(es) of the program to be evaluated. This applies when considering minority firms to evaluate programs which serve minority clients (students and adults); firms with experience in evaluating educational programs for minority client groups can bring a unique sensitivity to their work and its interpretation. Such cases still require objective examination and careful comparison with competing firms.

One Shot or Continuing Evaluation?

This is one of the most important management questions. How it is answered determines *who* does the job and *what* the job is. At one extreme, the "one shot" evaluation is a go or no-go test. The evaluator comes in, runs his own drug education program or assesses one in operation to see if it works. He uses some arbitrary criterion of efficacy such as 10% reduction in illicit drug use as self-reported by students and then renders his report.

Conversely, in the "evaluation-as-feedback" research program, the evaluator and the drug education program are established as permanent parts of the system. Their worth is assumed. The evaluator is supposed to make observations, interpret data according to some criterion of worth, and report it to the educators so that they may incorporate it in revising procedures. The program, as such, is neither evaluated or questioned. The evaluator can assess teaching techniques, visual aids, and perhaps the effectiveness of program content in achieving its goals. The "evaluation-as-feedback" program requires an inside evaluator; it is an interlocking structure of working relationships between those who watch and those who do.

Decision-Making: Standards and Priorities

Decision-making standards should be established prior to undertaking an evaluation. These standards should be set out along with the definition of objectives and the assessment of the political environment. It requires that the administrator define his

primary constituency and its priorities. Let us assume, for instance, that the evaluation shows a decrease in drug use among youngsters. What if the cost of the program is $5 per child whereas all other social problem teaching costs 50¢ per child? Suppose the townspeople are more upset about school costs and property taxes than they are about drug use. The administrator may then argue for a "community standard" which is "sound fiscally" and decide to delete the expensive program.

General consideration of the community's standards as evidenced by its attitude toward school programs is vital. Equally important are the priorities related to different groups of students being exposed to the program.

Preventing Resistance

It should be clear that an evaluation program may make enemies. A great deal depends on how the evaluation program is introduced. It is usually a good idea to sound people out first to determine if there are fears or opposing interests. If none exist, one can proceed, making sure that all who may be interested are kept informed and allowed to make suggestions. Access channels should be kept open so that those wishing to participate in the evaluator selection and general program planning stages can do so. During the planning stage, the administrator may find that some conceive of evaluation as a tool to advance their personal ideas or interests. The wise administrator will judge whether this can be allowed without jeopardizing the effort. The planning stage, even without opposing interests, may require three to six months, to assure general agreement and participation.

If evaluation is to take place under conditions of conflict, the administrator may force the issue rather than take the time to work through the conflict. Alternatively, he may delay the evaluation, using the time lag to reconcile interests and reduce emotions. He may try to remove the evaluation effort from the general conflict arena (insulating, isolating or encapsulating it). Similarly, he may try to create a climate of cooperation by involving antagonists in planning so that compromise research designs emerge.

The goals of the evaluation influence the degree of resistance. If goals are of a "long-term feedback, content improving, let-us-reflect-together" kind, they are less likely

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- Should the children be allowed to s

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Or, what if the evaluator is a university

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[6] Human Subjects Committees are required under Nati

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reflect-together" kind, they are less likely to cause trouble. As studies of social programs, psychotherapy and hospital care show, even these goals can create disaster if the evaluator's standards are seen as divergent from the standards of the workers.

Ethical Considerations

When doing work which asks people about their private affairs, it is considered ethical to let them decide for themselves if they will cooperate. When inquiring about personal matters, anonymity and confidentiality must be guaranteed. Gathering information that may have uses harmful to the respondent creates an obligation for the inquirer. Researchers *must* protect the respondent from such harm. This means that no unauthorized person will have access to data. Furthermore, confidentiality requires an assurance that *authorized* persons are well-trained, reliable, and trustworthy.

These ethical guidelines may pose some difficult questions. Consider the example of children who are asked about their drug use in a classroom-distributed questionnaire. Assume that the city fathers, the school board, the school administrator and the teachers consider the question proper. Assume that the parents have been notified and have entered no protest . . .

- Should the children be allowed to say whether or not they want to reply even though they may lack legal authority to act on their own behalf?
- If the children are allowed to decline to answer, are we prepared to accept the skewing of the results of the study?
- Should children also be allowed to decide whether they participate in the drug education program itself?

Or, what if the evaluator is a university teacher whose Human Subjects Committee[6] rules that no matter what the state law may

[6] Human Subjects Committees are required under National Institute of Mental Health and National Institutes of Health rules for institutions receiving such federal funds for health research. The obligation of the Committee, in each recipient institution, is to insure full consent, protection against harm, confidentiality, etc. Guidelines exist for setting up procedures, but an institution's committee may decide to be more stringent than the NIMH-NIH rules require.

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say regarding drug education and parental consent for drug use inquiries, the researcher *must not* proceed with any teaching or testing without securing individual written permission from each child, regardless of his age? Finally, what if the issue of children's consent becomes politicized so that attacks on the entire system of compulsory education are mounted?

Each of these ethical issues has already been raised in connection with the evaluation of drug education. Since drug evaluation is in its infancy, one may realistically expect that school administrators who begin research will face one or another of these issues in their communities. Their resolution is fundamental to the role of children, the role of schools, the role of the mind, and the role of social science research.

There are, however, procedures which should be taken to insure that a drug education program is not vulnerable to accusations of unethical conduct.

- The administrator should interest himself in the design and the conduct of the research as an assurance that the program meets ethical guidelines.
- Parents should be notified that drug education is being conducted and that the evaluative results will be made available to them. If state and local regulations permit, parents may be given a choice as to whether their children will participate in the program.
- Students may be informed that if the measure is of drug use, they need not participate in the testing. They may also be informed that their replies are anonymous and that the research procedures can in no way jeopardize respondents because of breakdowns in the security of data processing. This would mean that names will not appear on forms returned and, if it is a longitudinal study, that the code numbers identifying respondents are unknown to everyone except the code keeper on staff. It also means that parents, principals and police will never be allowed access to identifying research data. If case histories are to be included, they must be modified so as not to be identifiable.

The administrator employing evaluat new situations where children or fa inadvertently in the course of research. E no claim to being innocuous or ineffect be sure that its impact is on policies and

What to Do with the Report

Several questions need answers *prio* research study:

- Who has authority over the findi
- Who will have the right to see the
- When, if ever, will they becom scholarly dissemination?

If evaluation is conducted under con stipulate ownership of the findings. S tempted to exercise control to protect t of material which they feel may reflect The research worker will likely want the for he views the purpose of research knowledge. A commercial research grou likely to be concerned with the dispositi

Even if there has been an agreemen pressure may be applied to persuade th authorites—not to do so. Conversely, a release or other censorship of the fi pressures arising for their release.

Although contracts set forth legal define ethical responsibilities, social re The researcher with no contractual obli to release his data must make a polit pressure to censor it. In this instance, with the same results but fewer ever, to stress strong findings in supp interest is ethically questionable. It is a censor on behalf of intermediate interes tion to those who financed the study o findings. The same applies to the researc

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tifying research data. If case histories are to
they must be modified so as not to be

The administrator employing evaluators should be watchful for new situations where children or families might be damaged inadvertently in the course of research. Ethical research need make no claim to being innocuous or ineffectual; its responsibility is to be sure that its impact is on policies and programs.

What to Do with the Report

Several questions need answers *prior to* the beginning of a research study:

- Who has authority over the findings?
- Who will have the right to see them?
- When, if ever, will they become available for public or scholarly dissemination?

If evaluation is conducted under contract, the contract should stipulate ownership of the findings. School authorities may be tempted to exercise control to protect themselves from the release of material which they feel may reflect badly on their programs. The research worker will likely want the findings released publicly for he views the purpose of research to be the expansion of knowledge. A commercial research group doing evaluation is not likely to be concerned with the disposition of the findings.

Even if there has been an agreement to release the findings, pressure may be applied to persuade the researcher—or the school authorites—not to do so. Conversely, a contract providing for no release or other censorship of the findings does not prevent pressures arising for their release.

Although contracts set forth legal obligations, they do not define ethical responsibilities, social realities, or common sense. The researcher with no contractual obligation to surrender rights to release his data must make a political decision when under pressure to censor it. In this instance, a report may be rewritten with the same results but fewer value judgments. However, to stress strong findings in support of a particular group interest is ethically questionable. It is also unethical to become a censor on behalf of intermediate interests while denying information to those who financed the study or are most affected by the findings. The same applies to the researcher who withholds results

to protect himself. The researcher should never violate promised confidentiality. Data should not be released in such a manner as to negate a study's utility.

Most problems can be anticipated. Presuming the reports themselves are well written, clear, comprehensive and represent sound analysis, they will contribute to knowledge and improvement.

Applying the Findings

Evaluation work is said to occur in three phases. **Phase one** involves preparation to do the study; it requires getting money, finding people, gaining cooperation and clarifying objectives. **Phase two** is the actual evaluation research; it requires competence. **Phase three** involves reporting and putting the findings to work; it requires reporting clearly and fairly, identifying issues, discovering implications, and communicating dispassionately.

The third phase is often overlooked. A shrewd administrator looks ahead to sources of resistance and realizes that evaluation of existing programs is necessary. One could guess that of 100 sound and probing evaluation reports on existing institutions (hospitals, police departments, government agencies, schools) 50 may be read, 20 read carefully, 10 considered for implementation and 5 acted upon. These are estimates—the important thing is not to have them become accurately sour prophecies on how drug education evaluation results will be received.

How does one avoid a tabling motion to delay change forever by burying the report? I have earlier talked about "trying to force" versus "trying to convince" people to allow evaluation. The same dilemma faces the administrator reading an evaluation report which clearly shows that his drug education program is not doing what it *ought* to do. First, attempts should be made to gain acceptance and implementation by involving at an early stage those who might be affected by change. Second, the inventive administrator will see that, whatever form his participatory involvement takes, it will come to grips early with issues, remain task oriented, begin to explore change before the evaluation findings are announced, and continuously plan for change. All in all, the administrator will use his powers wisely to gain acceptance of research recommendations.

Administrative competence is a comb
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APPENDIX

DEPARTMENT OF HEALTH, EDUCATI
REGIONAL OFFICES: MENTA

Region I—Boston, Massachusetts

John F. Kennedy Federal Building
Boston, Massachusetts 02203
Phone: (617) 223-6824

Region II—New York, New York

26 Federal Plaza
New York, New York 10007
Phone: (212) 264-2567

Region III—Philadelphia, Pennsylvania

Mailing address:
P. O. Box 13716
Philadelphia, Pennsylvania 19101
Phone: (215) 597-6680
Location:
3531-35 Market Street, 4th floor

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Administrative competence is a combination of know-how, foresight, and an ability to capitalize on opportunity. These qualities are as necessary in the administrator as in the evaluator he hires. The potential value for educational improvement is great when competent administration is coupled with competent evaluation.

APPENDIX

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE REGIONAL OFFICES: MENTAL HEALTH

	States
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John F. Kennedy Federal Building Boston, Massachusetts 02203 Phone: (617) 223-6824	Connecticut Maine Massachusetts New Hampshire Rhode Island Vermont
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Kansas City, Missouri 64106
Phone: (816) 374-5291

Region VIII—Denver, Colorado

Federal Office Building, Room 9017
1961 Stout Street
Denver, Colorado 80202
Phone: (303) 837-2555

Region IX—San Francisco, California

Federal Office Building
50 Fulton Street
San Francisco, California 94102
Phone: (415) 556-2215

Region X—Seattle, Washington

1321 Second Avenue, Room 5082
Arcade Plaza M.S. 509
Seattle, Washington 98101
Phone: (206) 442-0524

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States
Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee
Indiana
Illinois
Michigan
Minnesota
Ohio
Wisconsin
Arkansas
Louisiana
New Mexico
Oklahoma
Texas

Region VII—Kansas City, Missouri

601 East 12th Street
Kansas City, Missouri 64106
Phone: (816) 374-5291

States: Iowa, Kansas, Missouri, Nebraska

Region VIII—Denver, Colorado

Federal Office Building, Room 9017
1961 Stout Street
Denver, Colorado 80202
Phone: (303) 837-2555

States: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

Region IX—San Francisco, California

Federal Office Building
50 Fulton Street
San Francisco, California 94102
Phone: (415) 556-2215

States: Arizona, Nevada, California, American Samoa, W. I., Guam, Hawaii

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1321 Second Avenue, Room 5082
Arcade Plaza M.S. 509
Seattle, Washington 98101
Phone: (206) 442-0524

States: Alaska, Idaho, Oregon, Washington

3 Basic Experimental Designs

by

John J. Horan

One of the most crucial components of drug educatio evaluation is the selection of an appropriate experimental desig Without a proper design, it is impossible to determine whether not your educational efforts are bringing you any closer to yo goals. You may decide on a design prior to or concomitant wi any of the other drug education evaluation components.

Choosing an appropriate design is easy; there are very fe options. Most drug educators will find that meeting the requir ments of such a design is also a relatively simple matter. It important to remember, however, that the design must be chos before the project gets underway. Even the most sophisticat statistical "cures" cannot restore an inappropriate design to goo health. In the following illustrations of appropriate and inappr priate designs you will see why the latter need never be employe

INAPPROPRIATE DESIGNS

The Unassessed Program Design: P → ?

The Unassessed Program Design might also be known as th "practitioners punt." Symbolically, "P" represents program, th "→" stands for followed by, and the "?" is self-explanator Unfortunately, this is perhaps the most frequently employe design in the drug education field.

To illustrate, let's consider the plight of a school principal wh wants to eliminate the possibility of drug abuse in his stude population. He invites a speaker to lecture on the perils of pe and personal addiction (P). The speaker receives a moderate rou of applause, and the principal feels he has done something curtail drug abuse. But did he in fact do so? It was not know whether there was a drug problem in the school before the speak came, and it was not measured whether the speaker's talk affect the extent of the problem, if a problem did indeed exist. T principal's hunches are inadequate measuring devices.

Another variation of this design is to collect data irrelevant the goals of the program. Questionnaires, for example, containi such items as "How old are you?", "How would you rate t speaker's ability?", etc. might have been distributed after the tal

Such information may in fact be interesting and worth compiling, but it is only remotely related to the stated purpose of the program, which was intended to reduce the consumption of illegal drugs in the student population.

The Single Group Posttest Design: P → M

Some authors (e.g., Campbell and Stanley, 1967; Popham, 1972) refer to this as the "case study" design. Such a term is, in fact, a misnomer. In the first place, this design involves a group of subjects rather than the examination of an individual case. Furthermore, this is a grossly inadequate design, whereas the empirical case study (see Thoresen, 1972; Kazdin, in press) is a legitimate research endeavor.

Essentially, the Single Group Posttest Design involves following a drug education program with an appropriate measuring device (M). Reverend Goodby, for example, was interested in changing the drug attitudes of his younger parishioners in a conservative direction. He rented a number of films, and after showing them, tested the viewers with a standard drug attitude scale. He then noted that his audience was quite conservative, at least in relation to the average score obtained with the same instrument on a national sample. What Reverend Goodby didn't know, however, was whether or not his parishioners became conservative as a result of the films. Indeed, many such films are known to produce opposite effects. In actuality, Reverend Goodby could have softened the congregation's already strong stand against drugs.

The Single Group Pretest-Posttest Design: $M_1 \rightarrow P \rightarrow M_2$

The addition of a pretest (M_1) prior to the drug education program adds considerable strength to the Single Group Posttest Design. Reverend Goodby, for example, had he pretested, would now know whether or not his young parishioners were more conservative in their drug attitudes after seeing the films than they were before the showing. Unfortunately, however, should such a shift have occurred, Reverend Goodby still wouldn't know for sure what caused it because other intervening factors may have entered in.

Campbell and Stanley have identified six "rival hypotheses" or competing explanations which co
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APPROPRIATE DESI

The Pretest-Posttest Control Group Design

Although the above symbolism may
conducting the Pretest-Posttest Control G
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Design. In this design "R" stands for ran
the experimental program; and "P_2", the o

To illustrate this design, let us consider
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primarily interested in increasing student
via required ninth grade health classes. S
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at the same time. Mr. Smith put all sixty s
The first name drawn was assigned to class
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In a protracted discussion on these and other rival hypotheses, Campbell and Stanley have clearly documented the need for using control groups in experimental research. A control group is another group identical in every respect to the experimental group with one exception: the control group is *not* exposed to the drug education program. If it is exposed, such exposure occurs at a later period of time. The deployment of control groups is illustrated in the following valid experimental designs.

APPROPRIATE DESIGNS

The Pretest-Posttest Control Group Design: $R \begin{cases} M_1 \rightarrow P_1 \rightarrow M_2 \\ M_1 \rightarrow P_2 \rightarrow M_2 \end{cases}$

Although the above symbolism may look quite imposing, conducting the Pretest-Posttest Control Group Design may actually involve less effort than the Single Group Pretest-Posttest Design. In this design "R" stands for random assignment; "P_1", the experimental program; and "P_2", the control program.

To illustrate this design, let us consider the efforts of Mr. Smith, chairman of the Health Education Department. Mr. Smith was primarily interested in increasing student knowledge about drugs via required ninth grade health classes. Sixty freshman students were due to enroll in one of two health class sections being offered at the same time. Mr. Smith put all sixty student names into a hat. The first name drawn was assigned to class 1, the second to class 2, the third to class 1 and so on until all sixty students were randomly assigned to one of the two classes.

Mr. Smith flipped a coin to decide which class would receive the experimental drug education program (P_1), i.e., an instructional unit with accompanying educational materials which appeared promising as a means of increasing student information about drugs. Mr. Smith then faced a dilemma about what to do with his control group. He could employ an expensive but less promising

instructional unit in the control class, or he could do nothing at all. Although the first option would have been preferable, Mr. Smith chose the second option for financial reasons. The standard curriculum for freshman health classes would serve as the control program (P_2). Both the experimental and control groups were pre .. and posttested with the same achievement test for measuring their knowledge about drugs.

Instead of exposing all sixty freshmen to an untested program, Mr. Smith saved time and money through a sound application of drug education research. By comparing the posttest scores of those who had been exposed to the experimental program with those who had not, Mr. Smith determined whether the program did indeed make a difference.

If the new program produced significant drug information differences for the experimental group, the control group could be given the experimental program at a later date. Some researchers plan for this eventuality with a design such as the following:

$$R \begin{cases} M_1 \rightarrow P_1 \rightarrow M_2 \rightarrow P_2 \rightarrow M_3 \\ M_1 \rightarrow P_2 \rightarrow M_2 \rightarrow P_1 \rightarrow M_3 \end{cases}$$

In the above design, both groups receive both experimental and control programs with such exposure occurring at different times.

The Posttest Control Group Design: $R \begin{cases} P_1 \rightarrow M \\ P_2 \rightarrow M \end{cases}$

Mr. Smith did not need to pretest the students in his project. Since he had the opportunity to randomly assign students to the experimental and control groups, he could have assumed that both groups were equal in their drug knowledge before the project began. Random assignment allows one to assume preprogram equality between experimental and control groups. Not only will both groups have the same information about drugs, but their average I.Q. and political composition will probably be quite similar too.

The Posttest Control Group Design is simpler to carry out than the Pretest-Posttest Control Group De superior because one doesn't have to pretest influencing the program.[7]

With the Posttest Control Group D assignment, the control group will dif experimental group in 5% of the experi for example, had the control group kn the experimental group, a weak progra have produced changes. On the other h known more about drugs than the exp best program might appear to have y ences.

Fortunately, these possibilities occu cases if random procedures are followe possibilities many investigators admin unless random reassignment occurs wh are discovered, the investigator will sti when it comes time to analyze his result

All of these problems might be re designs. Nevertheless, either of the two more than adequate to meet the need most of the time. Table 1 contains a which may help in deciding between designs.

QUESTIONABLE DE

Occasionally, drug educators find t inflexible job descriptions. For exampl opportunity to randomly assign peo control programs or they may be to receive the experimental program.

If you find yourself in a similar si

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Group Design: $R \begin{cases} P_1 \rightarrow M \\ P_2 \rightarrow M \end{cases}$

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With the Posttest Control Group Design, in spite of random assignment, the control group will differ significantly from the experimental group in 5% of the experiments. In Mr. Smith's case, for example, had the control group known less about drugs than the experimental group, a weak program might have appeared to have produced changes. On the other hand, had the control group known more about drugs than the experimental group, even the best program might appear to have yielded insignificant differences.

Fortunately, these possibilities occur in only one of twenty cases if random procedures are followed. To guard against such possibilities many investigators administer a pretest. However, unless random reassignment occurs when preprogram differences are discovered, the investigator will still face the same dilemma when it comes time to analyze his results.

All of these problems might be resolved by more complex designs. Nevertheless, either of the two designs described above is more than adequate to meet the needs of most drug educators, most of the time. Table 1 contains a number of considerations which may help in deciding between these two recommended designs.

QUESTIONABLE DESIGNS

Occasionally, drug educators find themselves "written into" inflexible job descriptions. For example, they may not have the opportunity to randomly assign people to experimental and control programs or they may be told that all students must receive the experimental program.

If you find yourself in a similar situation, there are several

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[7] For example, soldiers subjected to a urinalysis (pretest) followed by a drug education program may respond to that program differently than those who were not pretested. Since in such a case "M → P," might produce the change rather than "P" alone, it follows that anytime the program is carried out, it ought to be preceded by the same pretest

designs which you might consider although they may be questionable because they do not offer as much control as the appropriate experimental designs. Clearly they are considerably better than the inappropriate designs.

The Split Group Pretest-Posttest Design: $R \begin{cases} M_1 \rightarrow (P) \\ P \rightarrow M_2 \end{cases}$

The Split Group Pretest-Posttest Design may be employed when the drug education evaluator does not have the option of dividing his sample into experimental and control groups. Demands such as "everyone must be exposed to the program" or "the program may be conducted only once" may require modifications of research design.

The following procedures were adopted in a study by Swisher and Horan (1972). The authors were interested in pilot testing the effect of a particular social psychology technique on changing student attitudes toward drugs. The only sample was a group of freshmen who were v orientation program on the topic of drugs. conference room, every other student standard drug attitude scale. The techniqu the entire group. Those who were not p posttest. Differences found between the p showed that the social psychology techniqu changing student attitudes toward drugs.

This design has its weaknesses. For exam occurring while the program is being conduct by a member of the audience) might con group attitudes. Although the Split Group is not as strong as those recommended ea adequate than the inappropriate designs, an for exploratory or pilot research.

TABLE 1

Considerations in Choosing Between Two Recommended Experimental Designs

Questions	Preferred *Pretest-Posttest Control Group Design* $R \begin{cases} M_1 \rightarrow P_1 \rightarrow M_2 \\ M_1 \rightarrow P_2 \rightarrow M_2 \end{cases}$
Is there some question about the random assignment requirement? If so, use . . .	X
Is your measuring device (M) really conspicuous or reactive? If so, use . . .	
Are you programming people individually rather than in groups? (e.g., individual counseling vs. classroom instruction). If so, use . . .	
Are you working with less than 60 people? If so, use . . .	X
Are you primarily interested in whether or not your program works, rather than attempting to generalize your results to other settings? If so, use . . .	X

ıt consider although they may be question-
ot offer as much control as the appropriate
learly they are considerably better than the

-Posttest Design: $R \begin{cases} M_1 \rightarrow (P) \\ P \rightarrow M_2 \end{cases}$

est-Posttest Design may be employed when
uator does not have the option of dividing
ental and control groups. Demands such as
osed to the program" or "the program may
e" may require modifications of research

dures were adopted in a study by Swisher
authors were interested in pilot testing the
social psychology technique on changing student attitudes toward drugs. The only immediately available sample was a group of freshmen who were voluntarily attending an orientation program on the topic of drugs. As they filed into the conference room, every other student was pretested with a standard drug attitude scale. The technique was then applied to the entire group. Those who were not pretested were given a posttest. Differences found between the pre- and posttest scores showed that the social psychology technique used was effective in changing student attitudes toward drugs.

This design has its weaknesses. For example, extraneous events occurring while the program is being conducted (e.g., remarks made by a member of the audience) might contribute to the changed group attitudes. Although the Split Group Pretest-Posttest Design is not as strong as those recommended earlier, it is much more adequate than the inappropriate designs, and highly recommended for exploratory or pilot research.

TABLE 1

Considerations in Choosing Between Two Recommended Experimental Designs

	Preferred Design	
	Pretest-Posttest Control Group Design $R \begin{cases} M_1 \rightarrow P_1 \rightarrow M_2 \\ M_1 \rightarrow P_2 \rightarrow M_2 \end{cases}$	*Posttest Control Group Design* $R \begin{cases} P_1 \rightarrow M \\ P_2 \rightarrow M \end{cases}$
ut the random assignment requirement? If so, use . . .	X	
M) really conspicuous or reactive? If so, use . . .		X
ple individually rather than in groups? (e.g., individual nstruction). If so, use . . .		X
than 60 people? If so, use . . .	X	
ed in whether or not your program works, rather than our results to other settings? If so, use . . .	X	

OUNCIL

The Nonequivalent Control Group Design:

$$\begin{array}{l} M_1 \rightarrow P_1 \rightarrow M_2 \\ \text{-----------------} \\ M_1 \rightarrow P_2 \rightarrow M_2 \end{array}$$

The Nonequivalent Control Group Design differs from the Pretest-Posttest Control Group Design in that the subjects are not randomly assigned to the experimental and control groups. The dotted line (-----) indicates that the experimenter is dealing with "intact" groups. In other words, rather than randomly assigning students to ninth grade control and experimental classes, one ninth grade class might be selected which is already formed. It is exposed to an experimental program, and the results are compared with those of another ninth grade control class.

The validity of this design is directly related to how strong a case can be made that the experimental and control groups were equivalent before the program began. For example, volunteers differ in many respects from other members of the population. Hence, comparing the post program drug attitudes of an experimental group of student volunteers with a control group, which is similar but non-volunteer, may be less meaningful than using control group volunteers.

The strongest Nonequivalent Control Group Design would consist of intact groups impartially formed from the same or similar populations with the experimenter having the option of flipping a coin to determine which group receives the experimental program. The more deviance from this model, the less confidence you should place in the experimental results.

ADDITIONAL CONTROL CONSIDERATIONS

The concept of control essentially means the elimination of competing explanations for differences between experimental and control group which you are attempting to measure by the experimental program. The following control guidelines should be followed when feasible:

1. Train others to conduct the program rather than yourself. Select them randomly from the population of available program conductors, and once selected, randomly assign them to experimental and control p program by telling them which ap *OR,* allow each program conductor and control programs. The first p influence of experimenter bias, a duces the effects attributable to dif program leaders. The second proc differences among leaders.
2. Employ a "traditional" or placebo group instead of simply withho program. Just as sugar pills some change in health, one might occasio education program to yield change or use of drugs. Learning that your an alternate program is more valu your program is simply better than

ANALYSIS PROCED

After you have chosen a design, co collected data, you will be confronte alyzing your results. Your choice of desi dictate the type of statistical tool you mu

Kinds of Data

There are three kinds of data of meas education. Most drug educators will colle on a drug knowledge or attitude scale. *data* is "rank." While metric data can tel answers to 10 more questions about drug knew 4 more correct answers than Bill, only that John, Peter, and Bill, ranked *data* consists of tallies or counts, i.e., th passed or failed a specified criterion.

Metric data is usually analyzed by w *statistical tests.* Should you gather othe

ontrol Group Design:
$$\begin{matrix} M_1 \rightarrow P_1 \rightarrow M_2 \\ \hline M_1 \rightarrow P_2 \rightarrow M_2 \end{matrix}$$

t Control Group Design differs from the rol Group Design in that the subjects are not o the experimental and control groups. The licates that the experimenter is dealing with other words, rather than randomly assigning rade control and experimental classes, one ht be selected which is already formed. It is mental program, and the results are compared ninth grade control class.

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nequivalent Control Group Design would oups impartially formed from the same or with the experimenter having the option of ermine which group receives the experimental leviance from this model, the less confidence he experimental results.

AL CONTROL CONSIDERATIONS

ontrol essentially means the elimination of ns for differences between experimental and n you are attempting to measure by the n. The following control guidelines should be le:

conduct the program rather than yourself. ndomly from the population of available ctors, and once selected, randomly assign them to experimental and control programs. Do not bias the program by telling them which approach you feel is best. *OR,* allow each program conductor to run both experimental and control programs. The first procedure minimizes the influence of experimenter bias, and random selection reduces the effects attributable to differences in ability among program leaders. The second procedure controls only the differences among leaders.

2. Employ a "traditional" or placebo program to the control group instead of simply withholding the experimental program. Just as sugar pills sometimes produce a positive change in health, one might occasionally expect a weak drug education program to yield changes in knowledge, attitudes, or use of drugs. Learning that your program is "better" than an alternate program is more valuable than learning that your program is simply better than nothing at all.

ANALYSIS PROCEDURES

After you have chosen a design, conducted a program and collected data, you will be confronted with the task of analyzing your results. Your choice of design and kind of data will dictate the type of statistical tool you must employ.

Kinds of Data

There are three kinds of data of measures (M) relevant to drug education. Most drug educators will collect *metric data,* i.e., scores on a drug knowledge or attitude scale. The key word in *ordinal data* is "rank." While metric data can tell you that John knew the answers to 10 more questions about drugs than Peter, who in turn knew 4 more correct answers than Bill, ordinal data will tell you only that Jonn, Peter, and Bill, ranked 1, 2, and 3. *Categorical data* consists of tallies or counts, i.e., the number of people who passed or failed a specified criterion.

Metric data is usually analyzed by what are called *parametric statistical tests.* Should you gather other kinds of data or should

your metric data not meet the assumptions of any parametric test, there are a number of nonparametric tests which might be employed. Siegal's book, *Nonparametric Statistics for the Behavioral Sciences* (1956), provides an excellent illustration of the many different nonparametric procedures.

Statistical and Practical Significance

There are almost always differences between the experimental and control group on any evaluation measure. It is rare indeed for the average score in the experimental group to be identical to that of the control. Statistical analysis allows one to determine how likely it is that a given difference occurs by chance.

Should differences between the experimental and control groups occur in the expected direction and be significant at the .05 level, then you can be 95% sure that the drug education program brought you closer to your goals. Only 5 times out of 100 could such differences occur by chance.

On the other hand, particularly with large groups of people, the researcher may be faced with another decision: Is the statistically significant difference *practically* significant? For example, let us say that the average score of the experimental group is 2 points higher on a drug knowledge test than the average score of the control group. Even though this difference may prove to be significant at the .05 level, one must ask if it is really worth the time, effort, and expense of running the program.

Appropriate Statistical Tests

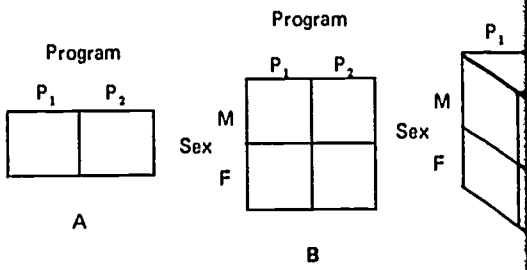
Table 2 depicts the type of statistical test which you ought to employ after collecting metric data via any of the various experimental designs available to you. It would be far beyond the scope of this chapter to provide you with detailed instructions on how to hand or machine calculate these tests. However, any statistical "cookbook" will provide you with this information (see, e.g., Downie and Heath, 1965 or Edwards, 1969).

If you have access to a computer center, Chapter 9 of this book, "Computers. Boons and Boondogg you.

More Sophisticated Analysis Consideration

Up to this point you have learned program is achieving its goals, i.e., "Does it be interested in discovering if the pr effective. For example, is it more effe females? Or, do young people with high in favorably than older people with average in

If you suspect that the program might b and if the potential population is het consider adding "factors" to the experim B and C depict the addition of sex and a (program) design. Whereas the simple d might require a 1-way analysis of variance in Figures B & C would require a 2 respectively. Such analyses will indicate w between the factors separately or as a res Be sparing in the addition of factors; co arise that are extremely difficult to advanced statistics book (e.g., Hays, 19 computational guidelines.



A more sophisticated analysis conside employ more than one measuring device (

t the assumptions of any parametric test, nonparametric tests which might be , *Nonparametric Statistics for the Be-*6), provides an excellent illustration nparametric procedures.

gnificance

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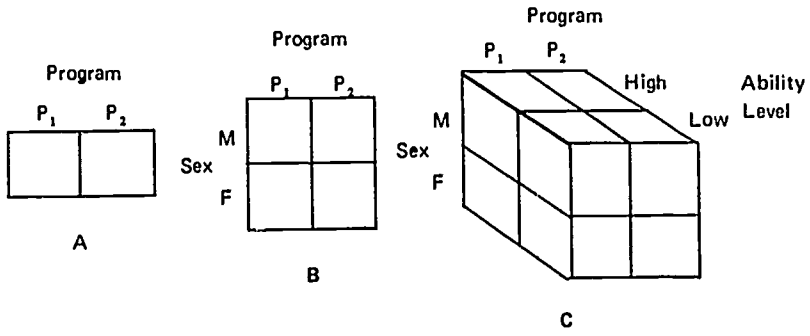
a computer center, Chapter 9 of this book, "Computers: Boons and Boondoggles," will be helpful to you.

More Sophisticated Analysis Considerations

Up to this point you have learned how to determine if a program is achieving its goals, i.e., "Does it work?" You might also be interested in discovering if the program is differentially effective. For example, is it more effective with males than females? Or, do young people with high intelligence respond more favorably than older people with average intellectual ability?

If you suspect that the program might be differentially effective and if the potential population is heterogeneous, you might consider adding "factors" to the experimental design. Figures A, B and C depict the addition of sex and ability level to a 1-factor (program) design. Whereas the simple design used in Figure A might require a 1-way analysis of variance (ANOVA), the designs in Figures B & C would require a 2- and 3-way ANOVA respectively. Such analyses will indicate whether differences exist between the factors separately or as a result of their interaction. Be sparing in the addition of factors; complex interactions may arise that are extremely difficult to interpret. Consult any advanced statistics book (e.g., Hays, 1963 or Winer, 1962) for computational guidelines.



A more sophisticated analysis consideration arises when you employ more than one measuring device (M). Several goals may be

TABLE 2

Experimental Designs and Suggested Analysis Procedures

Design		*Suggested Analysis Procedures*
Unassessed Program	$P \rightarrow ?$	No analysis possible
Single Group Posttest	$P \rightarrow M$	No analysis possible (except for "eyeballing" sample in compa
Single Group Pretest-Posttest	$M_1 \rightarrow P \rightarrow M_2$	t-test for correlated measures
Pretest-Posttest Control Group	R { $M_1 \rightarrow P_1 \rightarrow M_2$; $M_1 \rightarrow P_2 \rightarrow M_2$	1. Repeated measures analysis of variance (most proper) 2. Analysis of covariance using the pretest as a covariate (prop 3. Gain score analysis of variance (least proper)
Posttest Control Group	R { $P_1 \rightarrow M$; $P_2 \rightarrow M$	Analysis of variance or z-test (if sample is large); t-test for inde is small)
Split Group Pretest-Posttest	R { $M_1 \rightarrow (P)$; $P \rightarrow M_2$	Same as Posttest Control Group Design
Nonequivalent Control Group	$M_1 \rightarrow P \rightarrow M_2$ ..... $M_1 \rightarrow P \rightarrow M_2$	Same as Pretest-Posttest Control Group Design

KEY: M = measures, pre or post; P = program, experimental or control; R = random assignment; → = followed by; - - - = non-random assignment; (P) = program not considered

identified for your drug education program. In addition to increasing knowledge about drugs, for example, you may also wish to change both attitudes and behavior. Or, you may have only one goal in mind, but use several different instruments to measure it. However, a single multivariate analysis may be preferable to a separate analysis for each measuring dev if your measures are highly related. multivariate analysis, you may want to read Cattell's *Handbook of Multivariate* (1966).

TABLE 2

Experimental Designs and Suggested Analysis Procedures

esign			*Suggested Analysis Procedures*
		$P \rightarrow ?$	No analysis possible
		$P \rightarrow M$	No analysis possible (except for "eyeballing" sample in comparison to large group norms)
ttest		$M_1 \rightarrow P \rightarrow M_2$	t-test for correlated measures
Group	R	$M_1 \rightarrow P_1 \rightarrow M_2$ $M_1 \rightarrow P_2 \rightarrow M_2$	1. Repeated measures analysis of variance (most proper) 2. Analysis of covariance using the pretest as a covariate (proper) 3. Gain score analysis of variance (least proper)
	R	$P_1 \rightarrow M$ $P_2 \rightarrow M$	Analysis of variance or z-test (if sample is large); t-test for independent measures (if sample is small)
est	R	$M_1 \rightarrow (P)$ $P \rightarrow M_2$	Same as Posttest Control Group Design
roup		$M_1 \rightarrow P \rightarrow M_2$ ---------- $M_1 \rightarrow P \rightarrow M_2$	Same as Pretest-Posttest Control Group Design

post
ental or control

R = random assignment
→ = followed by

- - - = non-random assignment
(P) = program not considered

drug education program. In addition to about drugs, for example, you may also wish ades and behavior. Or, you may have only one e several different instruments to measure it. ultivariate analysis may be preferable to a separate analysis for each measuring device. This is especially true if your measures are highly related. If your study calls for multivariate analysis, you may want to consult a statistician or read Cattell's *Handbook of Multivariate Experimental Psychology* (1966).

4 Research: An Evolutionary Perspective

by

Richard W. Warner, Jr.

INTRODUCTION

No complete picture can be drawn of "the state of the art" drug education research without first determining the quanti and quality of existing studies. Administrators, researchers a educators alike must begin their programming and planni activities by asking the important questions: Where have oth been? What have they found?

Until quite recently, little thought was given to the importan of disseminating research information among drug program p sonnel and researchers. The few reliable studies that did exist we unpublished or remained hidden in obscure journals. Increas interest in measuring the impact of drug programs, however, h necessitated synthesis and analysis of past programs and t findings reported.

Before embarking on an evaluation, available studies such those included in this chapter should be identified, procured a carefully examined. Familiarization with "the state of the art" it has evolved can provide needed insights for use in subseque planning and implementation. Future program designs can th reflect a heightened understanding of past trials, failures a successes.

On another plane, examinations and modified use of dr education research offers a deeper understanding of the prese dilemmas faced by many drug educators. Most importantly, f both the present and the future of drug research: "the expe ments we do today, if successful, will need replication a cross-validation at other times under other conditions before th can become an established part of science, before they can theoretically interpreted with confidence" (Campbell and Stanle 1963, p. 3). For these reasons it is essential to consider t implications of each set of findings discussed in this chapter they relate to the body of knowledge as a whole—past, present a future.

HOW TO USE THIS CHAPTER

As a point of departure in gaining a clearer perspective of dr education research, this chapter provides abstracts of 17 dr

education programs, each of which has included some form of documented evaluation.[8] This seminal compilation is intended to present various program typologies and research designs as they were linked in evaluation studies. The Appendix to this chapter is a cross-indexed chart, highlighting key information about each program. The chart groups the programs discussed into four categories (represented by roman numerals I, II, III and IV). Program abstracts are presented, by category, in ascending orders of reliability, i.e., programs in category I, because they lacked outside control groups and used only nominal data, are *less* reliable than programs in category III which did utilize outside control groups for comparison, and so on.

While perusing Chapter 4 it will be useful for readers to identify relationships between their own program objectives and the selected research designs considered appropriate for measuring these objectives. Along this line, parallels should be drawn between the program goals and research designs studied in Chapters 1 and 3 of the handbook; those abstracts in Chapter 4 which are similar to the reader's program should be checked. Copies of these research reports should then be procured for critical examination and comparison with the reader's evaluation plans.[9]

I: PRE-EXPERIMENTAL EVALUATIONS OF A SINGLE APPROACH— NO OUTSIDE CONTROL GROUP FOR COMPARISON

IA "Evaluation of a Multimedia Drug Education Program"
James A. Kline
Journal of Drug Education, Vol. 2, No. 3, Sept. 1972, pp. 229-239

The program, while originally designed
sixth grade students, was used on an experi
junior high school students. All student
experimental program. There was no outs
comparison purposes. Pre- and post-measu
administered to the participants.

The program was divided into two part
hours of slides, tape recordings, and movies
entire 650 member student body. During th
one class hour per day was devoted to a sp
on some factor of drugs and drug abuse. T
lectures, role playing, and educational gam
posttest were gathered three weeks after th
reports that 25% of those students who sai
to the program indicated that the program
not to use drugs again. Further, 49% of the
wanted to experiment with drugs had deci
due to their experiences in the program.

IB "A Survey of a Workable Drug Abuse P
Herbert Blavat and William Flocco
Phi Delta Kappan, May 1971, pp. 532-533

This program, entitled Drug Expo '70,
3,300 students in grades 10-12 at Roose
Angeles, California. All students took p
program. There was no control group for
The program goals were to encourage the
stop using them and to prevent the non-dru
experiment with drugs. Only post-test mea
taken. The day prior to the start of th
teachers were involved in a day long
increase their awareness of the drug a
drug problems.

The one-week program relied heavily on
to 25 ex-addicts and the use of 55,000
information literature. The ex-addicts and
were assigned to homerooms where they
during the morning session. In the aft

[8] *Editors' Note.* This chapter represents a compilation of the research studies available to the author. Many other research reports have emerged since the author completed work on this section of the handbook. Chapter 4 is the core of an annotated bibliography and should not be interpreted as a representative overview of the body of existing drug education research.

[9] Because these findings are reported in an abbreviated format, it is highly recommended that readers procure original copies of the documents cited. The value of complete information is emphasized, readers are discouraged from relying solely on the synopses provided. *Editors' Note.* Most of the studies included in this chapter were pilot programs which failed to document specific objectives. Only pre-post measures were used and few, if any, of these programs controlled for teacher variability.

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ch reports should then be procured for
d comparison with the reader's evaluation

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A SINGLE APPROACH—
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ote. Most of the studies included in this chapter were
document specific objectives. Only pre-post measures
ese programs controlled for teacher variability.

The program, while originally designed for use with fifth and sixth grade students, was used on an experimental basis with 650 junior high school students. All students went through the experimental program. There was no outside control group for comparison purposes. Pre- and post-measures of drug use were administered to the participants.

The program was divided into two parts. The first day seven hours of slides, tape recordings, and movies were presented to the entire 650 member student body. During the following two weeks, one class hour per day was devoted to a specific activity focusing on some factor of drugs and drug abuse. These activities included lectures, role playing, and educational games. The results of the posttest were gathered three weeks after the program. The study reports that 25% of those students who said they used drugs prior to the program indicated that the program had influenced them not to use drugs again. Further, 49% of the students who said they wanted to experiment with drugs had decided not to experiment due to their experiences in the program.

IB "A Survey of a Workable Drug Abuse Program"
Herbert Blavat and William Flocco
Phi Delta Kappan, May 1971, pp. 532-533

This program, entitled Drug Expo '70, was conducted with 3,300 students in grades 10-12 at Roosevelt High School, Los Angeles, California. All students took part in the short-term program. There was no control group for comparison purposes. The program goals were to encourage the occasional drug user to stop using them and to prevent the non-drug user from starting to experiment with drugs. Only post-test measures of drug use were taken. The day prior to the start of the student program all teachers were involved in a day long workshop designed to increase their awareness of the drug abuse information and drug problems.

The one-week program relied heavily on the participation of 15 to 25 ex-addicts and the use of 55,000 pieces of printed drug information literature. The ex addicts and their probation officers were assigned to homerooms where they "rapped" with students during the morning session. In the afternoon, some of the

ex-addicts remained to "rap" with interested students. A large display area containing all the printed material was available for student use during lunch hour and free time.

The posttest of drug use indicated that 31% of the total student population had experimented with drugs prior to the program; 59% of these students felt that the program had influenced them to stop drug use. Of the total participants, 65 felt that the program had influenced them not to take drugs.

IC "A Pilot Program in High School Drug Education Utilizing Non-Directive Techniques and Sensitivity Training"
Marlin H. Dearden and James F. Jekel
The Journal of School Health, March 1971, pp. 118-124

This study concerns a pilot project conducted with twenty-four high school students in the Seymour, Connecticut High School. The first objective of the program was to involve both teachers and students in its planning. The goal was the development of a method of drug education based upon the group process. The pilot program consisted of two 12-member groups. One group met for an unspecified period of time and then the second group met. No control group was used.

Upon completion of the program, the participants' attitudes and usage of drugs was measured. Figures from the posttesting are not reported. Three of six drug users in the first group and one of the four users in the second group discontinued their use following the program. The effects of the program on attitudes are not reported, but the authors reported that a feeling of caring developed in both groups which led to less of an interest in drugs.

ID *A Study of More Effective Education Relative to Narcotics, Other Harmful Drugs and Hallucinogenic Substances*
A Progress Report submitted to the California Legislature as required by Chapter 1437, Statutes of 1968
California State Department of Education, Sacramento, 1970

This report concerns an extensive drug education program conducted in eleven school districts in California. Senior high, junior high, and elementary students
results from the 3,000 junior high and 1
were reported. Pre- and post-measures o
attitudes toward drug use, and actual us
tered. A control group of students was
purposes.

The programs were of a month's dura
traditional group discussion procedures.
ex-drug users were used as discussion
individuals such as doctors and police
media including pamphlets, films, and sli
degrees across the eleven schools. While
differ, they shared a direct approach t
drug abuse.

The results of the programs indicate
knowledge about drugs. Although attit
drugs seemed to move in a conservati
report increase of drug use in every c
the programs. The increase was especiall
students. The relationship between drug
described as follows: drug users' scores o
in the middle range while the non-user
and low ends of the knowledge scale.

IE *University of Chicago Laboratory Sc*
Report available from Murray Hozin
Science Department, University High
1362 East 59th St., Chicago, Ill. 60637

The drug education program was co
non-credit basis for interested high
University of Chicago Laboratory Sch
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cerns an extensive drug education program
n school districts in California. Senior high, junior high, and elementary students were used, but only the results from the 3,000 junior high and 1,100 senior high students were reported. Pre- and post-measures of knowledge about drugs, attitudes toward drug use, and actual use behavior were administered. A control group of students was not used for comparison purposes.

The programs were of a month's duration and relied heavily on traditional group discussion procedures. In some of the programs, ex-drug users were used as discussion leaders and, in others, individuals such as doctors and policemen were used. Various media including pamphlets, films, and slides were used in differing degrees across the eleven schools. While the eleven programs did differ, they shared a direct approach to the topic of drugs and drug abuse.

The results of the programs indicated an increase in student knowledge about drugs. Although attitudes toward the use of drugs seemed to move in a conservative direction, there was a reported increase of drug use in every category of drug following the programs. The increase was especially true among junior high students. The relationship between drug knowledge and use can be described as follows: drug users' scores on the knowledge test were in the middle range while the non-users scored at both the high and low ends of the knowledge scale.

IE *University of Chicago Laboratory School*
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Science Department, University High
1362 East 59th St., Chicago, Ill. 60637

The drug education program was conducted on a voluntary non-credit basis for interested high school students in the University of Chicago Laboratory School. A test designed to measure knowledge about drugs was given both prior to the start of the program and following its completion. A control group was not used.

Twenty students met on a seminar basis three times weekly during a fifty minute lunch hour. A science teacher presented factual material on drugs during the first five weeks and the

director of guidance led the discussion on the psychological and legal aspects of drugs for the last six weeks. Former drug addicts also were brought in to talk to the group.

Results from the pre- and posttesting are not reported. The students felt that the best way to deal with the informational aspects of drugs was within the regular curriculum, rather than special seminars. The presence of two different teachers affected the group's performance.

II: EVALUATIONS OF MORE THAN ONE APPROACH– NO OUTSIDE CONTROL GROUP FOR COMPARISON

IIA "An Evaluation of a Short-Term Drug Education Program"
John D. Swisher and James L. Crawford, Jr.
The School Counselor, March 1971, pp. 265-272

This drug education program was conducted in a private high school which included grades nine through twelve. Two-hundred and fifty students took part in the experimental program. There was no control group. In order to assess the impact of the three approaches used in the program, a knowledge scale, an attitude scale, and a behavior scale were administered to the participants two days prior to the start of the program and one week after the completion of the program.

The program itself contained three separate approaches. The program for the ninth grade consisted of three one-hour small group (23) sessions led by a psychiatrist. The program for the 10th and 11th grades consisted of one large group session (70) for one hour followed by a two-hour session were the students met in smaller discussion groups led by a psychiatrist. The program for the 12th grade was similar to the 10th and 11th grade program with several patients from the adolescent drug unit of a hospital involved in the large group session.

None of the approaches had any significant effect on the attitudes of the students, though the mean attitude scores did move slightly in a pro-drug direction. All three approaches were equally effective in significantly increasing the level of knowledge about drugs. The analysis of drug behavior prior to and subsequent to the program revealed no significant differences in drug use.

III: EVALUATIONS OF ONE AP
OUTSIDE CONTROL GROUPS FOR

IIIA *An Evaluation of the Effect of a Values*
Drug Abuse Education Program Using
Attitude Questionnaire
Richard E. Carney
Coronado Unified School District (Calif. 92

This program covered a three year period from grades four through twelve. The repo complex. Control groups were used for com

The program centered on the concepts making in situations which involve choice risky behaviors. Teachers were trained in cognitive dimensions related to drug abuse attempts in the normal classroom to conv information and to develop values incompa

The frequency of drug abuse and behavio be compatible with drug taking behavio students who participated in the values-or students not in the values-oriented program direction of holding more pro-drug attitud that these findings were statistically non- the author himself points out, it is impo effects of the value-oriented approach fro the classroom. Finally, there was no attem posttests; the pretested students were not the posttested.

IIIB "Drug Abuse Prevention"
John D. Swisher and Richard E. Horan
The Journal of College Student Personnel, S

"A Retreat on the Hazards of Drug Abu one full day at Temple University. Under students, and administrative staff of the U participants (N=99). The evaluation desi group (N=50) who did not take part in th posttesting of both participants and con

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OF MORE THAN ONE APPROACH— NTROL GROUP FOR COMPARISON

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nificantly increasing the level of knowledge
is of drug behavior prior to and subsequent
d no significant differences in drug use.

III: EVALUATIONS OF ONE APPROACH— OUTSIDE CONTROL GROUPS FOR COMPARISON

IIIA *An Evaluation of the Effect of a Values-Oriented Drug Abuse Education Program Using the Risk-Taking Attitude Questionnaire*
Richard E. Carney
Coronado Unified School District (Calif. 92118), March 1971

This program covered a three year period and involved students from grades four through twelve. The reports are voluminous and complex. Control groups were used for comparison purposes.

The program centered on the concepts of values and decision-making in situations which involve choices between more-or-less risky behaviors. Teachers were trained in both the affective and cognitive dimensions related to drug abuse problems. The program attempts in the normal classroom to convey the necessary drug information and to develop values incompatible with drug abuse.

The frequency of drug abuse and behavior which are assumed to be compatible with drug taking behavior are lower for those students who participated in the values-oriented program. Those students not in the values-oriented program tended to move in the direction of holding more pro-drug attitudes. It should be noted that these findings were statistically non-significant. Further, as the author himself points out, it is impossible to separate the effects of the value-oriented approach from other occurrences in the classroom. Finally, there was no attempt at matching pre- and posttests; the pretested students were not necessarily the same as the posttested.

IIIB "Drug Abuse Prevention"
John D. Swisher and Richard E. Horan
The Journal of College Student Personnel, Sept. 1970, pp. 337-341

"A Retreat on the Hazards of Drug Abuse" was conducted for one full day at Temple University. Undergraduate and graduate students, and administrative staff of the University, made up the participants (N=99). The evaluation design provided a control group (N=50) who did not take part in the conference. Pre- and posttesting of both participants and controls was designed to

measure the amount of information about drugs that was gained and the changes in attitudes toward the use of drugs. The central methodology was a series of small group discussions led by a variety of individuals including former drug abusers, psychiatrists, pharmacologists, and law enforcement officials.

The results of the pre- and posttesting indicated that the participants gained more than twelve points in their mean level of knowledge, while those in the control group gained only a fraction of a point. Participants held a negative attitude about LSD prior to the program, this attitude was sustained. Participants held favorable attitudes toward the use of marijuana prior to the program, which was significantly changed in the anti-marijuana direction.

IIIC "A Comparison of Two Approaches
to Planning Instruction on Drug Abuse"
Dorothy L. Pethel (unpublished master's thesis)
Sacramento State College, Sacramento, Calif., 1970

The program was conducted with four ninth grade classes in the Casa Roble High School. Two of the classes were used as controls and two took part in the experimental program. All four classes were administered a test measuring knowledge about drugs, attitudes toward their use and their actual use prior to the start of the program and after the program had been completed. The control group received a traditional, teacher-led unit on drug education.

The program for the two experimental classes was basically a student-centered group discussion format. The teacher gave the students the responsibility for selecting discussion topics, films to be used, and the kinds of resource people they would like involved. The control classes were instructed in the traditional lecture fashion. The same teacher taught all four classes. The length of the program is not reported.

The results of the pre- and posttesting indicated that while the mean level of knowledge about drugs increased for all students there were no differences between control and experimental groups. The results from the attitude scale indicated that there were no significant statistical differences between the two groups and that no significant attitude change occurred in either of the approaches. In fact, while the experimental groups' scores re

mained constant, the attitudes of the stu
moved in a non-significant pro-drug direc

IIID "Addicts in the Classroom: The Imp
Narcotics Program on Junior High S
Gilbert Geis et al. (unpublished repo
U.S. Office of Economic Opportunity, W

This program was conducted in a dep
Los Angeles. Two junior high schools
area were selected for inclusion in the s
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anti-drug position. The students rated th
most helpful individuals in the program.

IIIE *Effecting Drug Attitude Changes in*
via Induced Cognitive Dissonance
John D. Swisher and John J. Horan
The Pennsylvania State University

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atistical differences between the two groups
nt attitude change occurred in either of the
while the experimental groups' scores remained constant, the attitudes of the students in the control group moved in a non-significant pro-drug direction.

IIID "Addicts in the Classroom: The Impact of an Experimental Narcotics Program on Junior High School Students"
Gilbert Geis et al. (unpublished report)
U.S. Office of Economic Opportunity, Washington, D.C., 1969

This program was conducted in a depressed area in the city of Los Angeles. Two junior high schools within the Boyle Heights area were selected for inclusion in the study. Two schools nearby were selected to act as control schools and two Boyle Heights schools were to receive the experimental treatment. The control schools received a traditional drug education unit. Tests designed to measure knowledge about drugs and attitudes toward the use of drugs were administered to all schools prior to the start of the program and after its completion.

The experimental program used four ex-heroin addicts from the local area to train teachers and to work directly in the program. The focus of the program was to use the ex-addicts and the teachers both as transmitters of information and discussion leaders. The program attempted to establish Saturday seminars for the participants and evening sessions for parents, but these were dropped for lack of attendance.

The pretest of the four schools revealed that the mean level of drug knowledge and attitudes toward the use of drugs was not significantly different. The results from the evaluation of the posttest data revealed that the students in the experimental schools had gained significantly more knowledge about drugs than had the students in the control schools. The students in the experimental schools also improved significantly on a number of attitude items; there was a movement toward a more cautious, anti-drug position. The students rated the ex-addicts as being the most helpful individuals in the program.

IIIE *Effecting Drug Attitude Changes in College Students via Induced Cognitive Dissonance*
John D. Swisher and John J. Horan
The Pennsylvania State University

This program was a small pilot effort conducted to determine the effects of a new approach to the problem of drug abuse prevention. The program was conducted during the orientation week with thirty-four male and female freshman students at the Pennsylvania State University. The 34 participants were randomly assigned to experimental and control groups and were pre- and post tested on their attitudes toward the use of drugs.

The program consisted of a single seminar during which the participants completed both an attitude questionnaire and a value preference inventory. The value preference inventory was designed to yield a score which indicated whether the respondent preferred direct or mediated experiences. Direct experiences were characterized by a desire for direct participation, while mediated experience represented a desire to watch others participate. Each participant scored his own values inventory, and this was followed by a brief discussion of drugs and drug abuse. Toward the end of this discussion, the group leader pointed out that those who valued direct experiences and favored the use of drugs were being inconsistent, since drug use was a mediated experience. This discussion was followed by the posttesting.

The results of the testing indicate that this approach was differentially effective. Participants who preferred direct experiences and who were made to feel dissonant in the group showed attitude change in an anti-drug direction. Those students who valued mediated experience showed no change in attitude toward the use of drugs.

IIIF *Operation Future*

Jay Clark, Director
Kings Tulare Drug Abuse Countrol Project
Room 304, Courthouse, Visalia, Calif.

This program was conducted with a total of 851 students in grades five through ten, including two groups of pregnant minors, two church groups (one Catholic and one Protestant) and 65 youths on probation. While no control group was included, data collected from students involved in Operation Future were compared with data gathered from other students in the Tulare County area. The students were asked to complete two surveys prior to the start of the program and two These surveys were designed to measure a degree to which students held certain attitu to be compatible with drug abuse (i.e dissention, etc.). Correlations of the pre-p computed between the amount of drug us The average correlation between drug use attitudes as measured by the attitude instrur

The program is based on the work of Dr. University of Massachusetts. This is a valu which attempts to involve participants in large group strategies designed to develop and a clear understanding of their own researchers in this project also developed strategies that were designed to alter and related behavior among the participants.

In general, the program reports succes appropriate value patterns in the participan in reducing the amount of drug abuse, thou consistent across all groups. The program effective with younger students and les school-aged youngsters and students on prob

IV: EVALUATIONS OF MORE THAN O OUTSIDE CONTROL GROUPS FOR

IVA *Valuing and Drugs*

Lois P. Klein, Director
Drug Prevention Program
Tempe School District #3, Tempe, Ariz. 852

Although this program has a primary students, it has also operated in the junior of the Tempe school system. The program f work of Dr. Richard Carney in the Coronad (abstract IIIA.). The Tempe drug preventio third year of operation. It is a well-controlle using control groups for comparisons posttesting. The four treatment groups us

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prior to the start of the program and two after its completion. These surveys were designed to measure actual drug use and the degree to which students held certain attitudes that were assumed to be compatible with drug abuse (i.e., apathy, uncertain dissention, etc.). Correlations of the pre-program surveys were computed between the amount of drug use and these attitudes. The average correlation between drug use the presence of these attitudes as measured by the attitude instrument was .95.

The program is based on the work of Dr. Sidney Simon of the University of Massachusetts. This is a value clarification process which attempts to involve participants in a variety of small and large group strategies designed to develop decision-making skills and a clear understanding of their own value structure. The researchers in this project also developed 66 more specialized strategies that were designed to alter and/or strengthen value-related behavior among the participants.

In general, the program reports success in developing more appropriate value patterns in the participants. It was also effective in reducing the amount of drug abuse, though this finding was not consistent across all groups. The program seemed to be more effective with younger students and less effective with high school-aged youngsters and students on probation.

IV: EVALUATIONS OF MORE THAN ONE APPROACH– OUTSIDE CONTROL GROUPS FOR COMPARISON

IVA *Valuing and Drugs*
Lois P. Klein, Director
Drug Prevention Program
Tempe School District #3, Tempe, Ariz. 85282

Although this program has a primary focus on elementary students, it has also operated in the junior and senior high schools of the Tempe school system. The program follows very closely the work of Dr. Richard Carney in the Coronado Drug Abuse Program (abstract IIIA.). The Tempe drug prevention program is now in its third year of operation. It is a well-controlled and defined program using control groups for comparisons as well as pre- and posttesting. The four treatment groups used are: (1) a drug fact

only group; (2) a no-treatment control, (3) a values only group, and (4) a combined values and drug fact group.

The values only and the values component of the combined group were divided into three phases. The first phase was intended to identify high risk takers, it was assumed that these individuals would engage in drug abuse. The second phase was an educational effort which provided information about drugs and the development of a value system in the participants. The program was carried out in the classrooms, where the course of study (drug information and values material) developed during daily interactions between teachers and students.

This program involved over 9,000 students during a three year period. Both the values group and the combined groups have developed more positive attitudes about the use of drugs (i.e., anti-drug attitudes). Both groups are less involved in drug use than students in either the drug facts only groups or the no-treatment groups.

NOTE: The next three programs (IVB, IVC and IVD) all evolved from a series of drug prevention programs conducted at the Pennsylvania State University. Each is a refinement of the study which precedes it; hence they will be reported serially. The differences between the three programs will also be pointed out.

IVB "Experimental Comparison of Four Approaches to Drug Abuse Prevention Among Ninth and Eleventh Graders
John D. Swisher, Richard W. Warner, Jr. and Edwin L. Herr
Journal of Counseling Psychology, Vol. 19, No. 4, 1972, pp. 328-332

This program was carried out with two-hundred and sixteen students in the ninth and eleventh grades of a Pennsylvania school district. The students were selected randomly and assigned to the experimental and control groups. Eighty-one students at each grade level were assigned to one of three experimental groups and 27 students at each group level were used as controls. The controls received the standard health class unit on drugs for both the ninth and eleventh grades. All subjects were tested on a knowledge scale, an attitude scale, and a use scale prior to the program and following its completion. A coding system was used which protected the anonymity of the respo matching of pre- and posttests. The dr studies, had the following reliabilities: kr to .81. Figures were not available for the

The three experimental approaches us

- Relationship counseling groups allowed to explore the topic of they chose. The counselors role w
- Reinforcement counseling groups selor and two college and non-d The models were knowledgeable given an orientation regarding the were to move the discussions tow drugs. Reinforcement counselors focused on alternatives to the positively reinforce any statem behavior and attitudes incompatib
- Reinforcement counseling groups college aged ex-drug-abusing rol was the same as method two, t former drug abusing role models.

All counseling groups met for six sessi the program, the six counselors involv special training in Relationship Counselin training in Reinforcement Counseling. E each of the experimental treatments.

The evaluation results indicated tha significantly in knowledge about drugs. T however, were not more effective in incre control group. None of the treatments h on student attitudes toward drug ab appeared between treatments on the beha

IVC "A Study of Four Approaches to Dr Unpublished report to the Pennsylva Governor's Justice Commission
John D. Swisher and Richard W. War The Pennsylvania State University, Nov. 1

treatment control; (3) a values only group, lues and drug fact group.

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Richard W. Warner, Jr. and Edwin L. Herr *Psychology,* Vol. 19, No. 4, 1972,

carried out with two-hundred and sixteen nd eleventh grades of a Pennsylvania school were selected randomly and assigned to the trol groups. Eighty-one students at each ed to one of three experimental groups and up level were used as controls. The controls ealth class unit on drugs for both the ninth subjects were tested on a knowledge scale, a use scale prior to the program and ion. A coding system was used which protected the anonymity of the respondents, but allowed for matching of pre- and posttests. The drug scales, used in earlier studies, had the following reliabilities: knowledge .83, attitude .73 to .81. Figures were not available for the use scale.

The three experimental approaches used in this program were.

- Relationship counseling groups in which students were allowed to explore the topic of drug abuse in any fashion they chose. The counselors role was that of a facilitator.
- Reinforcement counseling groups which included a counselor and two college and non-drug-abusing role models. The models were knowledgeable about drugs and had been given an orientation regarding their role in the group. They were to move the discussions toward reasons for not using drugs. Reinforcement counselors were to keep the topic focused on alternatives to the abuse of drugs and to positively reinforce any statements which represented behavior and attitudes incompatible with drug abuse.
- Reinforcement counseling groups had a counselor and two college aged ex-drug-abusing role models. The treatment was the same as method two, the only difference being former drug abusing role models.

All counseling groups met for six sessions. Prior to the start of the program, the six counselors involved received 10 hours of special training in Relationship Counseling and 10 hours of special training in Reinforcement Counseling. Each counselor ran one of each of the experimental treatments.

The evaluation results indicated that all four groups gained significantly in knowledge about drugs. The experimental groups, however, were not more effective in increasing knowledge than the control group. None of the treatments had any noticeable impact on student attitudes toward drug abuse and no differences appeared between treatments on the behavior scales.

IVC "A Study of Four Approaches to Drug Abuse Prevention"
Unpublished report to the Pennsylvania
Governor's Justice Commission
John D. Swisher and Richard W. Warner, Jr.
The Pennsylvania State University, Nov. 1971

This program was a modification of the one just discussed. It was carried out with 321 college students. The program and procedures were identical to the high school program except for the following modification:

- In addition to the relationship counseling treatment and the two reinforcement treatments, this study included a rational discussion treatment which emphasized drug facts and drug-related issues. A no-treatment control was also used.
- The groups met for only four sessions of 75 minutes each instead of six sessions.

The results of this program indicated that all groups gained a significant amount of knowledge about drugs, but none of the treatments proved to be more effective than another. The results indicate that the students in every group shifted their drug attitudes in a significantly liberal (pro-drug) direction, the opposite of the desired results. While there were no significant treatment effects on the rate of actual drug use, the two reinforcement groups did decrease their amount of use while the amount of use increased in the rational discussion and control groups.

IVD "Drug Abuse Prevention: A Behavioral Approach"
Richard W. Warner, Jr., John D. Swisher and John J. Horan
Bulletin of the National Association of Secondary School Principals, Vol. 57, No. 372, April 1973, pp. 49-54

This program was conducted with 119 ninth grade students who were enrolled in a required health class. All students were randomly assigned to one of twelve counseling groups. The program was essentially the same as the previous two programs except for the following modifications:

- No models of any kind were involved in the reinforcement groups. Instead, an audiotape of an ex-drug-abusing peer model was played in the first group session.
- A cognitive dissonance treatment was used. This treatment involved a series of techniques designed to develop in young people who held pro-drug dissonance between selected value abstract IIIE.)
- The relationship group was the s earlier studies. The control group health unit.
- All groups met for six sessions of 45
- Three counselors were specially t feedback from the senior author a how sessions could be improved.
- Only participant attitudes toward measured.

The results indicated that the reinforce control treatment groups moved participa conservative (anti-drug) direction. The be the farthest; their movement was significa movement of relationship and dissonance significantly more conservative than the received the regular health unit.

IVE *Stanford University Drug Education Pr*
Richard H. Blum, Principal Investigato
Center for Interdisciplinary Research
Stanford University, Stanford, Calif. 94305

The Stanford University Drug Educati completed in 1975, is included because o and high potential impact on future schoo programs. This longitudinal study seeks non-medical psychoactive drug use in children by linking age of onset, type of u with school performance, child backgrou teristics. The impact of three kinds of drug onset and continuation will be assessed, as a two year follow-up. The sample is comp (1,200 high school students and 2,100 elem from grades 2, 4, 6, 8, and 10. They are

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young people who held pro-drug attitudes a degree of dissonance between selected values and drug use. (See abstract IIIE.)

- The relationship group was the same as those used in earlier studies. The control group did receive the regular health unit.
- All groups met for six sessions of 45 minutes each.
- Three counselors were specially trained. They received feedback from the senior author after each session as to how sessions could be improved.
- Only participant attitudes toward the use of drugs were measured.

The results indicated that the reinforcement, dissonance, and control treatment groups moved participants' drug attitudes in a conservative (anti-drug) direction. The behavioral groups moved the farthest; their movement was significantly different from the movement of relationship and dissonance groups, but it was not significantly more conservative than the control students who received the regular health unit.

IVE *Stanford University Drug Education Project*
Richard H. Blum, Principal Investigator
Center for Interdisciplinary Research
Stanford University, Stanford, Calif. 94305

The Stanford University Drug Education Project, due to be completed in 1975, is included because of its comprehensiveness and high potential impact on future school-based drug education programs. This longitudinal study seeks to identify patterns of non-medical psychoactive drug use in a sample of suburban children by linking age of onset, type of use and continuity of use with school performance, child background and family characteristics. The impact of three kinds of drug education on drug use onset and continuation will be assessed, as will other changes over a two year follow-up. The sample is comprised of 3,300 students (1,200 high school students and 2,100 elementary children), taken from grades 2, 4, 6, 8, and 10. They are randomly assigned to

three types of drug education in the schools: *basic* (a brief informational approach), *didactic* (a comprehensive informational approach), and *process* (a decision making and value clarification approach). The basic approach serves as a control group since California law requires that some form of drug education be presented to all school children. Results will provide information on what kind of child begins what kind of drug use, when, what happens over two years, and how different drug education methods affect that use.

Enlarging on the educational component, the study is designed to allow a look at:

- Three educational formats
- Higher income schools vs. lower income schools
- Teachers compared for effectiveness
- Frequency of exposure
- Effect of varying class size

Members of the project staff conduc classes in the 12 participating schoo materials are screened; curricula are desig

The data gathering procedure in comparison of test replies administered month intervals. The instruments, wh fidentiality, ask about: 1) availability; intentions. A group-administered writt ployed for students in grades 5-12. T individually interviewed using color p photographs shields naive youngsters fro drug information and bypasses reading le

No preliminary reports are anticipate study, 1974-1975, will be devoted exclus report preparation. (See Chapter 6 for a study.)

APPENDIX

Type of Evaluation and Title of Report	*Elementary* grades 1-6			*Junior High* grades 7-9			
	K	A	U	K	A	U	K
I. PRE-EXPERIMENTAL EVALUATION OF SINGLE APPROACH—NO OUTSIDE CONTROL GROUP FOR COMPARISON:							
A. Evaluation of a Multi-Media Drug Education Program. (D)						X	
B. A Survey of a Workable Drug Abuse Program. (D)							
C. A Pilot Program in High School Drug Education Utilizing Non-Directive Techniques and Sensitivity Training. (D)							
D. A Study of More Effective Education Relative to Narcotics, Other Harmful Drugs and Hallucinogenic Substances. (D)				X	X	X	X
E. University of Chicago Laboratory School. (D)							X

g education in the schools: *basic* (a brief ch); *didactic* (a comprehensive informational ess (a decision-making and value clarification approach serves as a control group since ires that some form of drug education be ol children. Results will provide information ld begins what kind of drug use, when, what years, and how different drug education use.

educational component, the study is designed

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ing class size

Members of the project staff conduct all the drug education classes in the 12 participating schools. Available educational materials are screened, curricula are designed and field tested.

The data gathering procedure in the classroom allows a comparison of test replies administered by the project staff at six month intervals. The instruments, which carefully guard confidentiality, ask about: 1) availability; 2) experience; and 3) intentions. A group-administered written questionnaire is employed for students in grades 5-12. The younger children are individually interviewed using color photographs. The use of photographs shields naive youngsters from premature exposure to drug information and bypasses reading level problems.

No preliminary reports are anticipated. The final year of the study, 1974-1975, will be devoted exclusively to data analysis and report preparation. (See Chapter 6 for a detailed discussion of this study.)

APPENDIX

Type of Evaluation and Title of Report	*Elementary* grades 1-6			*Junior High* grades 7-9			*High School* grades 10-12			*College*		
	K	A	U	K	A	U	K	A	U	K	A	U
ENTAL EVALUATION OF SINGLE APPROACH—NO TROL GROUP FOR COMPARISON:												
Multi-Media Drug Education Program. (D)						X						
Workable Drug Abuse Program. (D)									X			
in High School Drug Education Utilizing Techniques and Sensitivity Training. (D)								X	X			
re Effective Education Relative to Narcotics, Drugs and Hallucinogenic Substances. (D)				X	X	X	X	X	X			
hicago Laboratory School. (D)							X					

Type of Evaluation and Title of Report	Elementary grades 1-6			Junior High grades 7-9			Hig grad
	K	A	U	K	A	U	K
II. EVALUATION OF MORE THAN ONE APPROACH—NO OUTSIDE CONTROL GROUP FOR COMPARISON:							
A. An Evaluation of a Short-Term Drug Education Program. (D)				X	X	X	X
III. EVALUATIONS OF ONE APPROACH USING AN OUTSIDE CONTROL GROUP FOR COMPARISON:							
A. An Evaluation of the Effect of a Values-Oriented Drug Abuse Education Program Using the Risk-Taking Attitude Questionnaire. (ID)	X	X	X	X	X	X	X
B. Drug Abuse Prevention. (D).							
C. Comparison of Two Approaches to Instruction on Drug Abuse. (D)				X	X	X	
D. Boyle Heights Narcotics Education Experiment. (D)				X	X		
E. Effecting Drug Attitude Change in College Students Via Induced Cognitive Dissonance. (D)							
F. Operation Future. (ID)		X	X		X	X	
IV. EVALUATIONS OF MORE THAN ONE APPROACH USING AN OUTSIDE CONTROL GROUP FOR COMPARISON:							
A. Preventing Drug Abuse, Tempe, Arizona. (ID)		X	X		X	X	
B. Experimental Comparison or Four Approaches to Drug Abuse Prevention Among Ninth and Eleventh Graders. (D and ID)				X	X	X	X
C. A Study of Four Approaches to Drug Abuse Prevention. (D and ID)							
D. Drug Abuse Prevention: A Behavioral Approach. (ID)					X		
E. Stanford University Drug Education Project (D and ID)	X	X	X	X	X	X	X

KEY: K—Knowledge
A—Attitude
U—Use

D—program focused solely on topic of drugs, i.e., "direct focus."
ID—program focused on attitudes and/or behavior, drug discussions played secondary role, i.e., "indirect focus."

pe of Evaluation and Title of Report	Elementary grades 1-6			Junior High grades 7-9			High School grades 10-12			College		
	K	A	U	K	A	U	K	A	U	K	A	U
MORE THAN ONE APPROACH—NO OUTSIDE FOR COMPARISON:												
hort-Term Drug Education Program. (D)				X	X	X	X	X	X			
F ONE APPROACH USING AN OUTSIDE FOR COMPARISON:												
Effect of a Values-Oriented Drug Abuse Using the Risk-Taking Attitude	X	X	X	X	X	X	X	X	X			
on. (D).										X	X	
Approaches to Instruction on Drug Abuse. (D)				X	X	X						
tics Education Experiment. (D)				X	X							
ude Change in College Students Via Induced e. (D)											X	
ID)		X	X		X	X		X	X			
F MORE THAN ONE APPROACH USING AN OL GROUP FOR COMPARISON:												
se, Tempe, Arizona. (ID)		X	X		X	X		X	X			
arison or Four Approaches to Drug Abuse inth and Eleventh Graders. (D and ID)				X	X	X	X	X	X			
proaches to Drug Abuse Prevention. (D and ID)										X	X	X
on: A Behavioral Approach. (ID)					X							
Drug Education Project (D and ID)	X	X	X	X	X	X	X	X	X			

D—program focused solely on topic of drugs, i.e., "direct focus."
ID—program focused on attitudes and/or behavior, drug discussions played secondary role, i.e., "indirect focus."

5 Pitfalls in Data Collection

by

Donald Jones

The purpose of this chapter is to alert you to possible distortion of drug education evaluation results that can occur as a consequence of the data collection process itself. We will use the term "interviewer" for the person who collects data, whether he is administering a written instrument (a questionnaire) to a group or conducting a one-to-one inquiry. Whatever the measuring device, the role of the interviewer is a complex one and, necessarily, critical to the accuracy of what is to be learned. The interviewer is the only link between the evaluator, who analyzes and interprets data from the test population, and the respondents, who possess that information. Moreover, the interviewer is much more than a recording device, simply collecting information on subjects as a clerk might inventory his stock. Early researchers defined the interview as "a conversation with a purpose" (Bingham and Moore, 1924). Furthermore, this conversation takes place in "a pattern of interaction in which the role relationship of interviewer and respondent is highly specialized" (Kahn and Cannell, 1957, p. 16).

BACKGROUND: CLINICAL INSIGHTS ON INTERVIEWING

Understanding the complexity of the interview and the consequent possibilities for bias is not a problem unique to educational research involving interviews and questionnaires administered to students. Our awareness of complexity and bias derives from astute observation in many closely related fields—psychiatry, sociology, anthropology, and psychology, in particular. Psychiatrists, beginning with the powerful insights of Freud, early came to realize that what goes on between two people involves a great deal more than what is visible on the surface. In the same way, the answers one person gives to another's questions rests on many factors besides the nature of the question itself and the "facets" possessed by the respondent. Freud was probably the first to realize how much hidden feelings and attitudes could affect the conduct of everyday life. Harry Stack Sullivan, following Freud, placed further emphasis on variations in interpersonal conduct between any two people engaged in what he called a transaction. There is, he pointed out, no such thing as a neutral observer who

simply collects information from his patient or client. Whatever emerges from that interview is a product of their own particular interpersonal transaction. The expectations that both hold about themselves, about each other, and about what is proper or improper to say and do in a given setting affect the interview. Prior experiences in similar settings—or the transfer of feelings and habits from quite different past settings to the present one—also influence the transaction.

Whether the interview is a clinical one with a diagnostic or healing purpose, or whether it is a research one with an information-gathering intent, one must expect that the roles of the two people vis-à-vis one another do affect all aspects of how they act toward each other, what the one asks and how the other responds. The very words "doctor," "teacher" or "researcher" vis-à-vis the "patient" or "client," the "student" or the "subject," all imply roles with an implicit hierarchy of status, obligations, authority, and interacting properties. Sullivan early noted the expectation that the clinician interviewer is an "expert" and that for an interview to begin normally the interviewer has to perform with some of the expected skill and authority. When his personal conduct is under question (or scrutiny as in the case of drug use), the client or research subject may experience anxiety. In such instances, the interview itself can represent a threat to his self-regard, or to those psychological defenses which have been erected over the years to protect against feelings of insecurity. In clinical work, the interviewer who is not aware of the central importance of anxiety is likely to fail. In research dealing with sensitive personal issues, of which drug use can well be one, the interviewer who fails to recognize that students may be anxious and defensive is likely to create situations where distorted information is produced. That researcher also fails his subjects ethically, for he may have created discomfort in them in the pursuit of his own rather than their interests.

It can happen that the failure to recognize the psychodynamic components in either clinical work or interpersonal research occurs because both parties seek to proceed "normally", that is, not referring to how either may feel or perceive the other. On the other hand, either or both parties to an interview may want to avoid dealing further with the response material, i.e., they may want to keep their eyes closed to what is o
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Anxiety, of course, is not the only elem
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consider these later in the chapter.

INTERVIEWER ROL

A primary requirement for data gathere
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Anxiety, of course, is not the only element which may exist to distort an ordinary interpersonal inquiry, so too can the effort on the part of a subject to conform to what he believes to be the desires of the interviewer. Deutsch and Murphy (1955) in their presentation of the problems of the clinical interview remind us of these and other important factors. As we shall see in a later discussion, some of the same features which a psychiatrist considers as interpersonal psychodynamics affecting the content of conversations, have been examined from the differing perspectives of social scientists. Instead of identifying features of personality and emotion, these studies show how factors identified as roles, attitudes, persuasion, cues and the like lead to predictable interview outcomes. Such outcomes may distort information from being hypothetically (and only hypothetically) "pure" substance. If there is anything which the body of clinical observation and scientific research has to tell us, it is that there is no information unaffected by the manner in which it is derived. In socio-educational research this means that the context of the interview inevitably affects how the information is produced and what meanings as well as facts it conveys. To attempt to control for these variables, certain standard procedures are employed. We shall consider these later in the chapter.

INTERVIEWER ROLE

A primary requirement for data gathered from any population is comparability or reliability. To be meaningful in evaluation research, information must be quantifiable, capable of statistical manipulation, and must not vary widely because of the personality

of any one interviewer or the circumstances surrounding a particular encounter. To this end, all interviewers must use consistent procedures and try not to reveal attitudes, perceptions or expectations which can bias subject reporting. However, as Lewis Dexter (1956, p. 153) points out, "the ideal is not to establish neutrality for its own sake but to create a situation in which the informant will tell what is needed." Hence, the function of the interviewer is not to be an unobtrusive, passive agent, but to teach the subjects their respondent role, communicate clearly the meaning of each question asked, and motivate them to cooperate.

The interviewer should help establish the respondent role by making it clear that there is no expected, normal or more acceptable answer. The only "correct answer" is the frank accurate response. The interviewer should also be able to instruct respondents in the precise meaning of each question asked. For example, in being queried about drug use, subjects may be unsure if they have taken a particular drug or not. Interviewers, therefore, should be familar with the common forms, shapes, sizes, and street names of drugs in case a question is posed in which a subject describes an item or gives a street name. The interviewer who offers and records such a "translation" must recognize that he may be introducing rather than preventing error and so must probe carefully. In most drug studies, respondents are asked to report on conduct which is illegal, and for the most part, disapproved of by adults important in their lives. In consequence, an environment for anxiety-free communication must be established. This implies subject confidence in the interviewer's promise that all reporting is confidential and that it can never be passed along to parents, police or school officials.

Reliability studies in other fields have indicated that subjects do give inaccurate data on surveys which touch upon important social norms or personal values. Lamale (1959) has shown in a survey on consumer expenditures that respondents consistently under report liquor consumption. Wenar (1963) has shown that mothers distort their children's developmental histories in ways that make their children seem precocious. Cannell and Kahn (1968, p. 545) conclude from these and other studies that, depending on the type of information sought, respondents do distort the facts in order to "maintain self esteem, to be perceived by the interviewer as a person who does not violate important
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person who does not violate important social norms in thought or act, and to present an image of consistency and worthiness." You may assume that the same motivation to distort is operating when you ask about the use of drugs.

Given the factors operating against accurate reporting, the conception of the interviewer as a neutral, unobtrusive, featureless recording machine is obviously inadequate. Rather, the interviewer must actively and enthusiastically seek to motivate subjects to fulfill their role as truthful respondents. In the introductory remarks, the value of the evaluation project and the important part which the subjects play should be stressed. In some cases, the ultimate value of the research will have to be proven for older students who, in these anti-intellectual times, may be dubious about science or education or both. Since the research will not benefit subjects directly, the interviewer must also develop a relationship with respondents which, though transitory, is sufficiently meaningful and rewarding to enlist their trust and cooperation.

Although recent social psychological literature is replete with verbal and non-verbal techniques for shaping respondent behavior, interviewers necessarily have their own ways of communicating warmth and interest which, as a reward or reinforcement, establish rapport and encourage truthfulness (Cannell and Kahn, 1968, pp. 581-583). Interviewers should remember, however, that their ultimate goal is to gather reliable data, not to become friends or seek to be admired. Hyman (1954) presents a number of case histories which show that too much rapport can bias reporting because the respondent does not want to upset the interviewer or damage their budding friendly relationship.

SOURCES OF BIAS

Much research has been done on the sources of bias in the information-seeking interview. Hyman (1954) cites work showing that Black and Caucasian interviewers elicited significantly different data from Black respondents on the subject of racial discrimination. Robinson and Rohde (1946) found that on the subject of attitudes toward Jews, interviewers who were judged to be non Semitic in appearance and name obtained significantly

more anti-Jewish statements than did interviewers who were judged to be Semitic. Other studies have also shown that an interviewer's demographic characteristics—sex, perceived age and social class—can also bias responses on certain subjects.

Attitudes displayed by an interviewer can also influence a subject's responses. Rice (1929) discovered that a prohibitionist and a socialist obtained significantly different data from urban "derelicts" on the causes of their destitution. As one might expect from other research on need-determined perception and experimenter bias, the data collected by each tended to resemble his own opinions on the subject. Interviewers also influence respondents to report in a fashion consistent with the interviewer's expectations (Baker, 1942). Guest (1947) and Flowerman (1950) have studied the fidelity with which interviewers followed the prescribed wording of questions. They found that interviewers often re-worded items to fit what they thought would be appropriate for the subject's age, level of intelligence, maturity, social class and so on. However, the changed wording distorted the content of the interview and tended to reflect the needs of the interviewer more than respondents. One very clear finding is that interviewers may elicit or record reports which fit their conception of what the respondent "meant" to say or, a step further removed, what that respondent "ought" to have done or thought and, therefore, "should" be reporting.

The re-wording phenomenon points out one way in which internal events (attitudes, perceptions, motives, expectations) can influence an interviewer's behavior and thus bias responses. Errors can also occur in the probing for additional data or in the recording to responses, especially as the interviewer introduces his language into the presumed response. Potentially, any aspect of an interviewer's verbal or non-verbal behavior can shape respondent reaction and thereby introduce bias.

INTERVIEW AS EXPERIMENT

An educational evaluation project is an experiment in the sense that it is an attempt to measure the effects of an intervention on a given population. Insofar as several forms of education may be compared, or other factors manipulated, it experiment of a conventional scientific sor the interview itself resembles an experiment (experimenter) administers an instrument subject and collects information (measur controlled experiment if he compares variou or recording with one another.

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It is well known that experimenters behavior in subtle, presumably unintention planaria (Rosenthal and Halas, 1962) and d indicated that animal behavior can be affec different experimenters. With human subj biased by the experimenter's sex (Stevenson age (Ehrlich and Riesman, 1961). In certa effects have resulted from the experimente level, his need for approval, or his intellig warmth (Rosenthal, 1965).

Other studies (Bootzin, 1971; Rosen Flenning, 1971) have shown that the expe (EBE) is often due to the experimenter's subject's performance or response. For exa laboratory rats in a maze learning task v experimenters who were led to believe "bright" and others "dull" (Rosenthal and subject responses to tasks are also influ menter's expectations (Rosenthal and Fode

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VIEW AS EXPERIMENT

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compared, or other factors manipulated, it may be a controlled experiment of a conventional scientific sort. One may argue that the interview itself resembles an experiment when the interviewer (experimenter) administers an instrument (intervention) to a subject and collects information (measures responses). It is a controlled experiment if he compares various ways of interviewing or recording with one another.

EXPERIMENTER EFFECT

It is well known that experimenters can affect a subject's behavior in subtle, presumably unintentional ways. Studies with planaria (Rosenthal and Halas, 1962) and dogs (Gantt, 1964) have indicated that animal behavior can be affected by the presence of different experimenters. With human subjects, responses can be biased by the experimenter's sex (Stevenson and Odom, 1963) and age (Ehrlich and Riesman, 1961). In certain cases, experimenter effects have resulted from the experimenter's anxiety or hostility level, his need for approval, or his intelligence level or personal warmth (Rosenthal, 1965).

Other studies (Bootzin, 1971; Rosenthal, 1969; Smith & Flenning, 1971) have shown that the experimenter biasing effect (EBE) is often due to the experimenter's expectations for the subject's performance or response. For example, performance by laboratory rats in a maze learning task was biased by student experimenters who were led to believe that certain rats were "bright" and others "dull" (Rosenthal and Fode, 1963). Human subject responses to tasks are also influenced by the experimenter's expectations (Rosenthal and Fode, 1961).

Written inquiries can also produce different responses depending on their nature. This has been shown by Dana & Dana (1970) to occur with laboratory tasks. Written instructions served as cues to the subjects as to how they were expected to respond.

DEMAND CHARACTERISTICS

The totality of cues in an experiment has been termed "demand characteristics" by Martin Orne (1962). Orne first demonstrated

the existence of demand characteristics in experiments on hypnosis (Shor and Orne, 1965). He found that a subject's preconception of the hypnotic state greatly influenced his behavior under hypnosis. He also found that faking "subjects" could fool experienced hypnotists by acting as if they were in a trance. These subjects were able to pick up cues from the experimenter and the experimental procedure as to how a "true" hypnotic subject would perform. Demand characteristics are a built-in problem in most social science research requiring elicited tasks or responses. A subject can bias the results by trying to confirm what he thinks is the experimental hypothesis or by "bending over backwards" to be impartial. Such second-guessing affects his behavior and biases the outcome. It is easy to see that experimenter effects and demand characteristics can distort data collected from a respondent in an interview. If there are several measures repeated over time, as, for example, a pretest followed by special drug education and then a retest, the student may realize that the evaluator is looking for a change of some kind. This awareness may bias his responses. If the questionnaire has loaded questions, encourages "faking good", or shows any of the many other weaknesses common to such forms, the experimenter-induced bias can be very powerful.

SELECTION AND TRAINING OF INTERVIEWERS[10]

Little is known about what type of person is most successful in gathering information about drug-taking and related behavior. The effects of the interviewer's sex, perceived age, education, social class, and drug use history on the accuracy of past drug-related surveys are not known. Manheimer et al. (1972) conducted a longitudinal study on male college students which included questions concerning personal drug use. Male interviewers in their 20's or early 30's achieved an interview completion rate of 90% and obtained reports on Scholastic Aptitude Test scores which proved to be reliable. The validity of t illicit drug use, however, is not known. C have reviewed the scattered studies done successful interviewers. Their only c research pointed to a modest relationsh sonal skills of the interviewer and succes the ability to establish rapport with resp probably better to evaluate applicants b interview setting than by matching them t

Studies have shown that training can interviewer bias into the data collection p for example, showed that interviewers c their expectations from distorting the re that interviewers in drug education evalu the consistent use of carefully developed Training requires practice with responde not part of the actual test population.

Evaluators who are preparing to w interviewers, new instruments and/or ne engage in extensive pre-testing. For instan should interview the same or similar subj Individual respondents should be reinter consistent. They can be asked if they wer about the interviewer. Group discussion an instrument is administered to individu discussion can focus on the behavior of i ness of the instrument and the honesty must also vary the test instructions, form order to find out how these factors might He must also be sure to control his coding for coders also can introduce error a terminated.

GUIDELINES: PREVENTIO

The following are suggested as guides f sources.

1. Pretest all interview and questionn

[10] *Editors' Note:* For an excellent report on interviewers who were trained and selected to collect drug-related information from young minority subjects, the reader is referred to *Youth, Ethnicity and Drugs* by Vincent Meyers and Joseph Bates of J–Squared, B–Squared Consultants, Los Angeles, California.

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proved to be reliable. The validity of their subjects' reports of illicit drug use, however, is not known. Cannell and Kahn (1968) have reviewed the scattered studies done on the characteristics of successful interviewers. Their only conclusion was that the research pointed to a modest relationship between the interpersonal skills of the interviewer and success in data collection. Since the ability to establish rapport with respondents is essential, it is probably better to evaluate applicants by visualizing them in the interview setting than by matching them to abstract criteria.

Studies have shown that training can control the intrusion of interviewer bias into the data collection process. Friedman (1942), for example, showed that interviewers can be trained to prevent their expectations from distorting the results. That finding tells us that interviewers in drug education evaluation must be trained in the consistent use of carefully developed standardized procedures. Training requires practice with respondents who are similar to but not part of the actual test population.

Evaluators who are preparing to work with inexperienced interviewers, new instruments and/or new test populations must engage in extensive pre-testing. For instance, different interviewers should interview the same or similar subjects and compare results. Individual respondents should be reinterviewed to see if they are consistent. They can be asked if they were honest or how they felt about the interviewer. Group discussions can be conducted after an instrument is administered to individuals or to the group. The discussion can focus on the behavior of interviewers, the effectiveness of the instrument and the honesty of replies. The evaluator must also vary the test instructions, format and the test setting in order to find out how these factors might influence test reliability. He must also be sure to control his coding and analysis procedures, for coders also can introduce error after the interviewers are terminated.

GUIDELINES: PREVENTION OF BIAS

The following are suggested as guides for avoiding common bias sources.

1. Pretest all interview and questionnaire forms.

The introduction, sequence and wording of questions, and length of the interview must be appropriate for the test population.

2. Train all interviewers in the consistent use of standardized procedures.
   During the evaluation study itself, interviewers should periodically review procedures to insure that standardized procedures are being followed.

3. Control all interview settings.
   As far as possible, all respondents should be interviewed in similar settings (e.g., classrooms, homes, on the job, etc.).

4. Provide privacy for respondents.
   In an individual interview, insure that no one can overhear the conversation. In the administration of the written instrument to a group, provide enough space between respondents to insure privacy.

5. Thoroughly introduce and explain the interview.
   The introduction should cover the following points: a) self introduction; b) the legitimacy and importance of the research; c) the process by which respondents were selected; d) the content of the interview; e) the confidentiality of responses.

6. Establish and maintain rapport.
   There is no one best way to establish rapport. Individual styles differ and the different characteristics of respondent(s) certainly demand flexibility. Interviewers should assume a warm, friendly demeanor and make it clear that there are no right, wrong, or expected responses to the questions he asks. If the test session is very long, the interviewer must maintain rapport and respondent motivation.

7. Pursue the meaning of unclear verbal responses.
   The interviewer should insure that, as far as possible, the meaning of all verbal responses is clear to him.

8. Use non-suggestive probes to comple
   Sometimes verbal responses are irre
   plete, or suspected as untrue. In suc
   can use an additional, improvised
   obtain a more focused and complet
   probes, however, can bias reports b
   which the interviewer expects or m
   instance, an interviewer can try to
   paraphrasing it (e.g., "Do you n
   non-suggestive probe would be "H
   "I'm not clear on that." If an ans
   interviewer can ask, "Can you tell
   the interviewer's capacity to use p
   deal on the level of rapport that has

9. Use the language of the respondent.
   Be sure that the respondent unde
   does not have to resort to guessing
   jargon.

10. Record all data at the time of the int
    Responses and additional observatio
    if not recorded at the time of the i
    be provided on instruments to note
    circumstances which affected data c
    vations should not be written dow
    respondents but certainly immediat

11. Review test instruments.
    Be sure that respondents have comp
    for any intentionally left unanswere
    correct code numbers on instrument

12. Beware of giving cues to respondents
    Any aspect of interviewer behavior
    and setting can supply cues to res
    formulating a hypothesis about the e

13. Control all coding and analytic proce

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ng of unclear verbal responses.
should insure that, as far as possible, the
bal responses is clear to hin.

8. Use non-suggestive probes to complete data.
Sometimes verbal responses are irrelevant, unclear, incomplete, or suspected as untrue. In such cases, the interviewer can use an additional, improvised question (probe) to obtain a more focused and complete response. The use of probes, however, can bias reports by suggesting responses which the interviewer expects or more readily accepts. For instance, an interviewer can try to clarify a response by paraphrasing it (e.g., "Do you mean . . .?"). A better non-suggestive probe would be "How do you mean?" or "I'm not clear on that." If an answer is incomplete, the interviewer can ask, "Can you tell me more?" Of course, the interviewer's capacity to use probes depends a great deal on the level of rapport that has been established.

9. Use the language of the respondent.
Be sure that the respondent understands each item and does not have to resort to guessing because of interviewer jargon.

10. Record all data at the time of the interview.
Responses and additional observations are easily forgotten if not recorded at the time of the interview. Space should be provided on instruments to note any unusual events or circumstances which affected data collection. These observations should not be written down in the presence of respondents but certainly immediately after the interview.

11. Review test instruments.
Be sure that respondents have completed all items, except for any intentionally left unanswered. If required, have the correct code numbers on instruments.

12. Beware of giving cues to respondents.
Any aspect of interviewer behavior or interview procedure and setting can supply cues to respondents who may be formulating a hypothesis about the evaluation.

13. Control all coding and analytic procedures.

Section Two

MEASURES FOR DRUG EDUCATION

Introduction to Evaluation Instruments

CONTENT AND ORGANIZATION

This series of three chapters describes instruments for use i assessing the impact of drug education programs on the know edge, attitudes and use behavior of target audiences. Chapters 6 an 7 include sample instruments developed and tested by the autho as part of their program research activities. Two Stanfor University Evaluation Scales are comprehensively described i Chapter 6 and four Pennsylvania State University Scales i Chapter 7. Immediately following most instrument descriptions is tear-out sample of the scale. These sample instruments may b modified and/or duplicated for use in evaluation projects. Add tional reliability and validity data relevant to the measure described in Chapter 6 and 7 are included in Appendices followin each chapter.

A modified instrument format is used in Chapter 8 sinc complete scales could not be printed in the handbook. For th purpose of illustration, and to aid in future instrument selectio the author suggests a variety of scales for consideration by thos measuring correlations between affective constructs and dru related knowledge, attitudes and behavior. Easy to rea "profiles" present key information regarding the developmen testing and applied utility of the various measures.

Mentioning or including particular instruments in this handboo is intended to provide readers with a set of fundamentally reliab instruments. The inclusion of sample instruments, however, is n an endorsement of some instruments to the exclusion of othe equally reliable, measures. The authors, aware of space limitation provided the sample instruments to serve as a point of departure i conducting research and to help alleviate delays required fo locating and procuring measures. Their scales also offer a standar of comparison for use in examining other scales in the futur Proper credit should be given to the author(s) and their progra whenever sample scales are duplicated.

LOCATING ADDITIONAL INSTRUMENTS

Familiarity with or use of the scales described in this section o the handbook should assist readers in identifying other measur

ment tools for use in collecting data about their program. These scales are reliable *starting points;* further exploration is recommended. Locating and selecting new and more useful test instruments is an important planning component and an ongoing activity for the serious evaluator.

A plethora of drug measures are available . . . some more reliable than others . . . more are being developed to encompass the diversity of objectives and prevention approaches being used experimentally. The appropriateness of measures for particular program designs and research goals is an essential issue in the planning of research projects. Generally, instrument selection can be facilitated by: 1) referring to the program's goals as a primary selection criterion; and 2) identifying the relevancy of each instrument based on its stated purpose, intended audience, reliability,[11] validity,[12] and content (i.e., the relevance of test items for the program being tested as well as the capabilities and sophistication of the target audience).

Finally, gaining access to information about available instruments can be accomplished in various ways. Professional journals and computerized dissemination services are initial points of connection with those developing and testing new instruments. Relying solely on journals and computer systems has obvious drawbacks—subscribers to such systems frequently receive new material as much as nine months after its initial release due to protracted lag time prior to actual publication. Therefore, contacts with other researchers and informed individuals should be initiated and cultivated. Program planners should se mailing lists of others doing similar research.

Following are three information service public about available test instruments in d fields such as health education and alcoholis starting point needing additonal expansion by

1. ERIC Clearinghouse for Tests, Meas ation, Educational Testing Service, P 08540. ERIC (Educational Research provides annotated bibliographies con taining to tobacco, smoking and drug readers request *TM Reports, Numbers 8*
2. Drug Abuse Research Instrument In Auburn Street, Cambridge, Massachus in January, 1972, the *Inventory—D Instruments* includes measures of atti the extent of drug use.
3. The Research Reference Files main alcoholism-related scales which are av G. Connor, Ph.D., Eastern Washin Cheney, Washington.

Individuals who have developed and tes should, whenever possible, make the sca available to the public. The services m dependable points of entry into the public newly funded research projects are usually measurement tools. Initiating contact with can often lead to discoveries about pote techniques and so on.

[11] Reliability studies show whether an instrument gives consistent results.

[12] Validity studies indicate whether an instrument measures the skills, abilities, competencies or traits which it purports to measure.

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Following are three information services which inform the public about available test instruments in drug abuse and related fields such as health education and alcoholism. Again, this list is a starting point needing additonal expansion by the reader.

1. ERIC Clearinghouse for Tests, Measurements and Evaluation, Educational Testing Service, Princeton, New Jersey 08540. ERIC (Educational Research Information Center) provides annotated bibliographies containing measures pertaining to tobacco, smoking and drugs. It is suggested that readers request *TM Reports, Numbers 8 and 9.*
2. Drug Abuse Research Instrument Inventory, 133 Mount Auburn Street, Cambridge, Massachusetts 02138. Published in January, 1972, the *Inventory—Drug Abuse Research Instruments* includes measures of attitudes, knowledge and the extent of drug use.
3. The Research Reference Files maintains an archives of alcoholism-related scales which are available from Dr. Ralph G. Connor, Ph.D., Eastern Washington State College, Cheney, Washington.

Individuals who have developed and tested new instruments should, whenever possible, make the scale and related data available to the public. The services mentioned above are dependable points of entry into the public domain. Accordingly, newly funded research projects are usually searching for specific measurement tools. Initiating contact with new project directors can often lead to discoveries about potentially useful scales, techniques and so on.

6 Stanford University Evaluation Scales

by

Emily F. Garfield and Richard H. Blum

PART ONE
THE STANFORD UNIVERSITY DRUG EVALUATION QUESTIONNAIRE

INSTRUMENT DESCRIPTION

The Stanford University Drug Evaluation Questionnaire is designed to assess reported individual drug use patterns in several age groups. Comparisons of the test replies administered at different times are used as indicators of the impact of an ongoing drug education program. The questionnaire was originally designed for use with 3,300 suburban school-aged children, grades 5 through 12, who were participants in a longitudinal drug evaluation project. The majority of the elementary school population comprised children from either white blue-collar or white upper-middle-class families. The high school population included ethnic minorities.

This instrument, which carefully guards confidentiality, may also be used to determine drug availability and use patterns at any point in time. The areas of inquiry are:

- Availability or exposure to a given substance
- Actual use
- Intentions to use

The questionnaire also includes age-appropriate informational questions that are changed with each administration (see sample questions in Appendix A). In our procedure, replies to these informational questions are not used in data analysis for they are designed to introduce the test categories and to vary the test content from one administration to another. Anyone wishing to use the instrument may select informational items from Appendix A or insert his own queries without affecting the validity or reliability. This instrument (administered in approximately 40 minutes) can be used with students in the 5th through 12th grades.

RELIABILITY/VALIDITY CONSIDERATIONS

Anyone electing to study the impact of any event on drug use (e.g., education, treatment, incarceration, etc.), will want to

measure that drug use on at least two occasions, doing so either longitudinally, by following identified individuals, or by retesting groups in certain prescribed ways. The most common way to estimate the drug use of a group of people is to conduct a survey using either an individually administered interview schedule or a group-administered questionnaire. Both methods assume that the person being asked about his drug use will report accurately. This assumption of accuracy involves several subordinate assumptions which, in behavioral science methodology, are considered problems of reliability and validity. Although terms have several meanings (see Cronbach, 1960), *reliability* most often refers to consistency while *validity* refers to the appropriateness of the measuring device.

Survey measures commonly employed must always be challenged as to their reliability and validity. For example, using a questionnaire in a study of the impact of education over a year, one has to ask, with reference to reliability, whether the student gives the same reply to the same questionnaire on one day as he does the next. Does he reply in the same way when the questionnaire is administered by different people? If the measuring instrument is changed (for instance, in the Stanford study where 4th graders are individually interviewed using pictures (see Part Two of this chapter) and 5th graders are given a written questionnaire, would the two instruments yield the same results if given at the same point in time? One must ask, with reference to validity, do the students answer honestly and what is the best means for getting at the truth?

It is easy to see possible sources of error. The student may lie by underreporting "bad" conduct or, with adolescent capriciousness, distort answers. He may want to tell the truth, but simply forgets what he has used and when. He may report in error since illicit substances are not "quality labelled" (e.g., reported mescaline is really amphetamine—see Smith, J.P., in Blum and Associates, 1973). Or the student may not be able to read and write well enough to respond to the questionnaire whatever his intentions and memory. It is best to presume that, in a large population of students, some or all of the above features—and others besides—will operate to produce errors. The researchers, then, must determine the degree of error than can be keep it to a minimum.

In order to establish validity, it is neces best means possible what "real" drug u preferable to seek other methods than rech himself, even if that method is applied onl sample population. Studies have tried va bioassays (which we do not recommend fo education), and inquiries directed to o believed to be in a position to corroborate the Stanford study, we decided to work on by obtaining estimates from four groups o ought to know about the student's drug beh

THE RELIABILITY/VALIDITY ST STANFORD INSTRUMENTS: COR

We strongly recommend that any test survey instrument either select one that ha reliability under similar conditions of a comparable sample population, or that he do their own work on reliability and va evaluation methodology. It is an expensive care, time and advance budgeting. Yet, just a must be evaluated, so too must the instrum evaluation.

In order to determine the degree o questionnaires and of our interviews with necessary to devise a reasonable system t self-reported drug use data. We reasoned th student (his friends, siblings, schoolmates a the most likely to be aware of that stu therefore, enlisted the cooperation of a sub-se chosen from children in grades 4, 6 or 8. W participate in the work and to give permissio be in several small substudies including friendship group interaction and intersiblin they relate to drug use. Only the substudies v the reliability of our testing instruments w

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In order to establish validity, it is necessary to estimate by the best means possible what "real" drug use is. We consider it preferable to seek other methods than rechecking with the student himself, even if that method is applied only to a subgroup of the sample population. Studies have tried various devices including bioassays (which we do not recommend for the evaluation of drug education), and inquiries directed to other persons who are believed to be in a position to corroborate student self-reports. In the Stanford study, we decided to work on the validation problem by obtaining estimates from four groups of people who, we felt, ought to know about the student's drug behavior.

THE RELIABILITY/VALIDITY STUDY OF THE STANFORD INSTRUMENTS: CORROBORATION

We strongly recommend that any test administrator using a survey instrument either select one that has a proven validity and reliability under similar conditions of administration with a comparable sample population, or that he be sure his researchers do their own work on reliability and validity as part of the evaluation methodology. It is an expensive procedure and requires care, time and advance budgeting. Yet, just as drug education itself must be evaluated, so too must the instruments which are used in evaluation.

In order to determine the degree of acceptance of our questionnaires and of our interviews with young children, it was necessary to devise a reasonable system that would verify the self-reported drug use data. We reasoned that those closest to a student (his friends, siblings, schoolmates and parents) would be the most likely to be aware of that student's drug use. We, therefore, enlisted the cooperation of a sub-set of families randomly chosen from children in grades 4, 6 or 8. We asked the families to participate in the work and to give permission for their children to be in several small substudies including the investigation of friendship group interaction and intersibling communication as they relate to drug use. Only the substudies which bear directly on the reliability of our testing instruments will be discussed here.

Our initial reliability data were based on information gathered from 20 families with children in grades 4 and 6. The study of 8th grade families was not complete at the time of writing.

We first contacted the 20 randomly selected students (called nominators) in the 4th and 6th grades, and, conducting a sociometric inquiry, asked each to name a maximum of three young people who would fall into each of the following categories:

- Those he liked to spend time with (i.e., friends)
- Those about his own age whom he most admired (i.e., models)
- Those about his own age whose advice he would follow on drug use (i.e., examples)

We also asked the nominator about the drug use of his close friends and for permission to contact his (her) nominees and ask them the same questions that were posed to him. As noted, parental permission was sought in each case and confidentiality guaranteed. The nominator's siblings, ten years of age or older, were also interviewed. The sibling interview included questions concerning the estimated drug use of brothers and sisters. Thus we were able to accumulate estimates of the drug use of the 20 student nominators by those we believed were in the best position to know—namely his friends, peers and siblings. These reports were subsequently compared with the test answers given by the student nominators in the school testing.

NOMINATOR SAMPLE

	4th Grade	6th Grade
Nominator*	10	10
Friends	14	14
Siblings	9 (33 sibling comparisons	7 (26 sibling comparisons)
Examples/Models	10	5

* In both the 4th grade (with the Drug Evaluation Interview) and 6th grade (with the Drug Evaluation Questionnaire), the nominators' self-reports showed experience with tobacco (N=4) and alcoholic beverages (N=10) but no use of any other illicit drug.

Our reliability coding was based on a four

- *complete agreement,* defined as use or non-use on the part of th rating his drug use
- *probable agreement,* defined as sp the rater consonant with actual dr student (i.e., a component of unc the rater, e.g., "I don't think he reporting non-use, or "I'm pretty a student reporting use)
- *probable disagreement,* defined a of use or non-use which is in self-report of the student being ra he uses . . ." for a self-reported us has tried . . ." for a self-reported n
- *disagreement,* defined as definit between the reports of the stude him

The nominator sample reliability results a of Appendix B of this chapter.

With self-reported nominator drug u (N=4) and alcohol (N=10), what has reported non-use of the more exotic il likely an outcome at the 4th and 6th gra the time of writing, recording approxima illicit drug use in the 4th grade and 6-8 pe

Another set of comparisons emerg collecting the reliability data which we f order not to focus our inquiry on the r nominee was presented with a list of fiv chosen classmates of the nominator plus The nominee was asked, "Looking over th you think their general attitude tow smoking marijuana, etc.) would be?" "D the list would smoke (drink, smoke m manner, nominees reappeared for whon self-reports of drug use (because the wh

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NOMINATOR SAMPLE

4th Grade	6th Grade
10	10
14	14
9 (33 sibling comparisons	7 (26 sibling comparisons)
10	5

th the Drug Evaluation Interview) and 6th grade (with the
e), the nominators' self-reports showed experience with
verages (N=10) but no use of any other illicit drug.

Our reliability coding was based on a four-point scale:

- *complete agreement,* defined as definite confirmation of use or non-use on the part of the student by the person rating his drug use
- *probable agreement,* defined as speculation on the part of the rater consonant with actual drug use as reported by the student (i.e., a component of uncertainty is introduced by the rater, e.g., "I don't think he uses . . ." for a student reporting non-use, or "I'm pretty sure he has tried . . ." for a student reporting use)
- *probable disagreement,* defined as speculative assessment of use or non-use which is in disagreement with the self-report of the student being rated (e.g., "I don't think he uses . . ." for a self-reported user, or "I'm pretty sure he has tried . . ." for a self-reported non-user)
- *disagreement,* defined as definite conflict on drug use between the reports of the student and the person rating him

The nominator sample reliability results are summarized in Table 1 of Appendix B of this chapter.

With self-reported nominator drug use confined to tobacco (N=4) and alcohol (N=10), what has been confirmed is the reported non-use of the more exotic illicit drugs—by far more likely an outcome at the 4th and 6th grade levels where we are, at the time of writing, recording approximately 2-4 percent reported illicit drug use in the 4th grade and 6-8 percent in the 6th grade.

Another set of comparisons emerged as we went about collecting the reliability data which we felt should be included. In order not to focus our inquiry on the nominating student, each nominee was presented with a list of five people—four randomly chosen classmates of the nominator plus that student nominator. The nominee was asked, "Looking over the list of people, what do you think their general attitude toward smoking (drinking, smoking marijuana, etc.) would be?" "Do you think anyone on the list would smoke (drink, smoke marijuana, etc.)?" In this manner, nominees reappeared for whom we had both original self-reports of drug use (because the whole class constituted part

of our experimental group) as well as estimates from other nominees of their drug use. Excluded were nominees who were not classmates. We called these the nominee/classmate sample. These comparisons have been tabulated as follows.

NOMINEE CLASSMATE* SAMPLE

	4th Grade	6th Grade
Considered Close Friends	55	53
Classmates/Peers	56	35
Totals	111 (based on reports from 66 individuals)	87 (based on reports from 63 individuals)

*3 nominees refused to participate

The nominee/classmate sample includes individuals reporting drug use as follows. In the 4th grade (with our interview instrument), tobacco (N=10), alcohol (N=56), marijuana (N=3), inhalants (N=3), and other drugs which include cocaine (N=2), and non-prescription use of amphetamines (N=2) and barbiturates (N=1), in the 6th grade (with our questionnaire instrument), tobacco (N=31), alcohol (N=54), marijuana (N=2), and other drugs which included non-prescription use of barbiturates (N=2).

Our reliability coding was based on the same four-point scale used in the nominator sample. The nominee/classmate sample reliability is seen in Table 2 of Appendix B of this chapter.

One sees, comparing the original nominator sample with the much larger nominee/classmate sample, (59 vs. 198), that a greater variety of illicit drugs is said to be used by the latter group (to be expected since a larger number of children are reporting). Likewise, overall prevalence of illicit use appears greater. The fact that some youngsters, themselves using illicit drugs, were raters of children not reporting illicit drug use for themselves, raises the first of several questions as to possible bias as one source of discrepancy between a subject and his rater. What if those who use illicit drugs tend to assume in their ratings that others are also using these drugs, regardless of what the "facts" might be? Were this the case, we would expect that there difference, when difference occurred, in students reporting less use than their drug- both 4th and 6th grades, one finds that discrepancies tends to be in the opposit raters tend to say students use all drugs les non-using raters, the trend is toward their the students also. Differences are slight and testing. In absolute numbers, students rep themselves than their classmates estimate that students are not concealing drug use.

One might also ask if particular rater gr in being either in disagreement or agreem use. Among the sociometric classes of r examples/models (the latter two con alysis)—which group, if any, is most cons with the student self-reports? We find tha greatest discrepancy (measured by the diffe and 6th grades), between the estimate of u compared to the student self-reports. M count over-all, drugs, friends and siblings te of disagreement. If one uses as a measur friends vs. siblings vs. examples/models bas of agreement on all drug categories, but number of discrepant ratings within any dr that for alcohol, the drug abuse in which disagreement, that siblings tend to show t ratings (Table 2, Appendix B).

The trend is weak, given the numbers statistical testing. One may speculate, research, that the advantage of siblings in may be that, insofar as alcohol is consume more than other groups can be knowledge siblings do. The trend toward consistently between examples/models and student nor lesser personal knowledge on the part of ex what students (nominators) do compared Only among the examples/models did o youngsters disclaiming any acquaintance w

106

group) as well as estimates from other use. Excluded were nominees who were led these the nominee/classmate sample. been tabulated as follows:

NEE CLASSMATE* SAMPLE

h Grade	6th Grade
55	53
56	35
111 (based on reports from 66 individuals)	87 (based on reports from 63 individuals)

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te sample includes individuals reporting In the 4th grade (with our interview N=10), alcohol (N=56), marijuana (N=3), ther drugs which include cocaine (N=2), of amphetamines (N=2) and barbiturates de (with our questionnaire instrument), ol (N=54), marijuana (N=2), and other on-prescription use of barbiturates (N=2). was based on the same four-point scale sample. The nominee/classmate sample e 2 of Appendix B of this chapter.

the original nominator sample with the ssmate sample, (59 vs. 198), that a greater said to be used by the latter group (to be r number of children are reporting). nce of illicit use appears greater. The fact emselves using illicit drugs, were raters of llicit drug use for themselves, raises the s as to possible bias as one source of bject and his rater. What if those who use me in their ratings that others are also less of what the "facts" might be? Were this the case, we would expect that there would be a consistent difference, when difference occurred, in the direction of the students reporting less use than their drug-using raters. Examining both 4th and 6th grades, one finds that the greatest number of discrepancies tends to be in the opposite direction; drug-using raters tend to say students use all drugs less frequently. As for the non-using raters, the trend is toward their estimating less use for the students also. Differences are slight and do not merit statistical testing. In absolute numbers, students report more drug use for themselves than their classmates estimate for them. This suggests that students are not concealing drug use.

One might also ask if particular rater groups show consistency in being either in disagreement or agreement with self-reported use. Among the sociometric classes of raters—siblings, friends, examples/models (the latter two combined for our analysis)—which group, if any, is most consonant in their reports with the student self-reports? We find that the trend is for the greatest discrepancy (measured by the different drug items for 4th and 6th grades), between the estimate of use by examples/models compared to the student self-reports. Measured by frequency count over-all, drugs, friends and siblings tend to show lower rates of disagreement. If one uses as a measure not the ranking of friends vs. siblings vs. examples/models based on the overall count of agreement on all drug categories, but instead the absolute number of discrepant ratings within any drug category, one finds that for alcohol, the drug abuse in which there was the greatest disagreement, that siblings tend to show the least discrepancy in ratings (Table 2, Appendix B).

The trend is weak, given the numbers involved, and negates statistical testing. One may speculate, subject to additional research, that the advantage of siblings in estimating alcohol use may be that, insofar as alcohol is consumed in the home, siblings more than other groups can be knowledgeable about what their siblings do. The trend toward consistently greater discrepancies between examples/models and student nominators might reflect lesser personal knowledge on the part of examples and models of what students (nominators) do compared to friends and siblings. Only among the examples/models did one hear, for example, youngsters disclaiming any acquaintance with the student nomi-

nating them as a person whose lead or advice they would follow, or whom they most admired.

On the basis of our reliability study, we do not find students underreporting their own drug use, but rather tending to report more use than those acquainted with them estimated for them. The least agreement between raters and students' self-reports occurs in that group of raters who appear least acquainted with the students. On these grounds, and limited to the 4th and 6th grades for which we have completed data analysis, we conclude that the instruments employed are useful measures of actual student drug use.

We are looking forward to our findings on the rating comparisons of the older students. We suspect, as we move into the higher grades where use of all drugs is greater (except perhaps prescriptions), that increasing discrepancies will be seen.

INSTRUCTIONS FOR ADMINISTRATION: PRELIMINARIES

The test administrator must explain the purpose of the testing to the students. He must carefully note that the main purpose of the instrument is to evaluate program effectiveness and *not* to locate or investigate illicit drug use. As administrator he must also impress upon the participants that of primary concern is the honesty and accuracy of the responses. Purposeful misrepresentation distorts the evaluation. A tack we have taken is to say it is preferable that a student not participate rather than lie. This also provides the option of non-participation which the voluntary (non-coercive) ethic of such testing requires. Since successful test administration probably relies heavily on the degree of trust and rapport established between the test administrator and the students, the questionnaire should only be given by an administrator who is known to the students.

CONFIDENTIALITY SAFEGUARDS

Confidentiality must be guaranteed all participants. If the research design does not call for a follow-up (a longitudinal study), then no identification code is necessary and coding methods for guaranteeing anonymity are not a problem. However, if the intention is to test for changes over time and the instrument is to be administered to the same persons on essential to employ an identification anonymity to the participant while, at follow-up through identification of respon administration.

The system we used was to assign a six each listed participant and store, for t matchings (under security lock and acces authorized people, e.g., biostatistician, p ing does not allow for the use of a con typewritten names and identification cod numbers table can be employed, provid securely stored. Each completed card w random number, is subsequently stapled face sheet. (As discussed later, the stude card prior to testing.)

INSTRUCTIONS

We recommend that no more than 30 any one time. Groups of this size are easie

Before actual distribution of the ques evaluator should also be sure that al necessary materials (i.e., pen or pencil). advance if any respondents will need a individualized help. Translated forms c individual administration arranged. Add numbers are to be assigned (i.e., for longit to bring along extra questionnaires with any new or unanticipated participants. T are in flux and school records inadequat record and assign a number to the new addition to the master list.

At the beginning of the test session should review the following with the parti

- The evaluation purpose of the qu a test or a policing device.
- The safeguards taken to insure co

son whose lead or advice they would follow, dmired.

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OR ADMINISTRATION: PRELIMINARIES

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DENTIALITY SAFEGUARDS

ust be guaranteed all participants. If the not call for a follow-up (a longitudinal study), n code is necessary and coding methods for mity are not a problem. However, if the or changes over time and the instrument is to be administered to the same persons on different occasions, it is essential to employ an identification system that can assure anonymity to the participant while, at the same time, allowing follow-up through identification of respondents on each successive administration.

The system we used was to assign a six-digit random number to each listed participant and store, for the future, the resulting matchings (under security lock and accessible to only one or two authorized people, e.g., biostatistician, project director). If funding does not allow for the use of a computer, 3 x 5 cards with typewritten names and identification codes assigned via a random numbers table can be employed, provided the matching list is securely stored. Each completed card with name and assigned random number, is subsequently stapled onto the questionnaire face sheet. (As discussed later, the student removes and destroys card prior to testing.)

INSTRUCTIONS

We recommend that no more than 30 participants be tested at any one time. Groups of this size are easier to manage.

Before actual distribution of the questionnaires to groups the evaluator should also be sure that all respondents have the necessary materials (i.e., pen or pencil). He should know well in advance if any respondents will need a non-English version or individualized help. Translated forms can then be prepared or individual administration arranged. Additionally, when random numbers are to be assigned (i.e., for longitudinal studies), it is wise to bring along extra questionnaires with unassigned numbers for any new or unanticipated participants. This occurs when classes are in flux and school records inadequate. The administrator can record and assign a number to the new member for subsequent addition to the master list.

At the beginning of the test session, the test administrator should review the following with the participants:

- The evaluation purpose of the questionnaire—that it is not a test or a policing device.
- The safeguards taken to insure confidentiality. Care must

be taken here to cover all aspects of confidentiality fully and honestly. Explain the rationale behind the use of identification numbers, the inaccessible master list (which will ultimately be completely destroyed) and the necessity for longitudinal studies. Using a sample questionnaire with attached coding card, the test administrator can demonstrate how, once the coding card is removed, it is impossible to identify a particular questionnaire without recourse to the master list (again saying that it is kept under security lock and available only to one or two authorized people). Occasionally, a participant will question the availability of the master list to any of the evaluation staff. In this case, it is necessary to rely on a "trust factor" developed between the participant and test administrator during the preceding group meetings. Solicit and answer all questions on the security system before proceeding further.

- The option of not participating rather than answering dishonestly which would seriously affect reliability of responses, and, in turn, the total program evaluation. No disapproval of non-cooperation should be shown.

Following these instructions, pass out the questionnaires and caution the respondents not to begin on their own. When all questionnaires have been distributed, the test administrator reads aloud the instructions on the face sheet. We have found that reading aloud keeps the group together and minimizes conversational interchange among respondents. Each person is directed to copy his code number onto the top of each page and, subsequently, to tear off and destroy the coding card. Next, help the respondents correctly complete any additional information requested on the face sheet.

Before beginning the questionnaire proper, the test administrator should explain to the respondents that a few factual questions have been inserted to make the instrument more interesting, that these questions are not coded, and that discussion of the answers will follow when the questionnaires are completed and collected—time permitting. Remind respondents to feel free to ask questions at any time. Read the questi
ally checking with the group to see if the p

CLARIFICATION

For all drugs, the reporting of the num
rather than the specific amount used is t
few puffs on a cigarette (or joint) is recor
though the entire cigarette (or joint) is no
few sips of beer, wine or liquor is conside
as is an evening when several units of ar
consumed.

When testing fifth and sixth grade child
of each drug is recommended as well
children will most likely know if they hav

For amphetamine and barbiturate cate
trator should stress that only non-pres
reported. A definition to the students of
opposed to medically supervised use is re
category, only deliberate inhalation is
accidentally smelling paint thinner simply
the house is not use).

For drug categories V through XI, the
know anyone . . .") contains a third possi
This alternative applies when a responden
but is not certain, that someone he kn
particular drug.

Concerning the intent to use item, th
amount of a particular substance is to be re

CODING AND COST

Coding is the technical process by wh
ized. The simplest and least e[illegible]sive met
tabulate the frequency of each response. M
analysis (funds permitting) can be su
recommended that this hand tabulation
with small sample populations (no more th
study or 200 for a cross-sectional study).

over all aspects cf confidentiality fully
lain the rationale behind the use of
ers, the inaccessible master list (which
ompletely destroyed) and the necessity
dies. Using a sample questionnaire with
rd, the test administrator can demon-
the coding card is removed, it is
tify a particular questionnaire without
aster list (again saying that it is kept
k and available only to one or two
. Occasionally, a participant will ques-
ty of the master list to any of the
this case, it is necessary to rely on a
loped between the participant and test
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estions on the security system before

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questionnaire proper, the test adminis-
the respondents that a few factual
erted to make the instrument more
stions are not coded, and that discussion
when the questionnaires are completed
tting. Remind respondents to feel free to

ask questions at any time. Read the questionnaire aloud, occasionally checking with the group to see if the pace is appropriate.

CLARIFICATIONS

For all drugs, the reporting of the number of occasions of use rather than the specific amount used is the goal. For example, a few puffs on a cigarette (or joint) is recorded as "one time" even though the entire cigarette (or joint) is not consumed. Similarly, a few sips of beer, wine or liquor is considered use on one occasion as is an evening when several units of an alcoholic beverage are consumed.

When testing fifth and sixth grade children, a brief description of each drug is recommended as well as reassurance that the children will most likely know if they have tried a particular drug.

For amphetamine and barbiturate categories, the test administrator should stress that only non-prescription use should be reported. A definition to the students of non-prescription use as opposed to medically supervised use is required. For the inhalant category, only deliberate inhalation is to be counted (i.e., accidentally smelling paint thinner simply because painters are in the house is not use).

For drug categories V through XI, the exposure item ("do you know anyone . . .") contains a third possible answer—"not sure." This alternative applies when a respondent has reason to suspect, but is not certain, that someone he knows has used or uses a particular drug.

Concerning the intent to use item, the intention to use *any* amount of a particular substance is to be recorded as "yes."

CODING AND COSTS

Coding is the technical process by which data can be categorized. The simplest and least expensive method of coding is to hand tabulate the frequency of each response. More elaborate statistical analysis (funds permitting) can be subsequently run. It is recommended that this hand tabulation procedure be used only with small sample populations (no more than 50 for a longitudinal study or 200 for a cross-sectional study). Major costs, in this case,

are almost exclusively limited to the salaries of the coders figured at approximately 12 questionnaires per hour. For larger sample populations, we recommend that you make use of a computer (see Chapter 9).

Other basic costs include questionnaire printing and collation. When informational questions are changed for different grades, as well as for subsequent test administrat practical to use a duplicating machi approximately $15 per 100 questionnai random numbers card, the stapling o assembling into test administration grou top of this.

(FACE SHEET)

Code Number_____

_____
(test series information, e.g., 1,2,3, . . . etc. or Fall '73, etc.)

STANFORD UNIVERSITY DRUG EVALUATION QUESTIONNAIRE

As you know, our group from _____ trying to find out if the drug program you are receiving is a good one. In order to do this, we need you help. We are asking you to please fill out this short questionnaire.

At the top of this page you will find a card with your name and a code number printed on it. Each o you has a different code number so that we can compare your answers collected at different times over th next couple of years. Only you and the computer know your code number. No one else will know thi questionnaire belongs to you, so you need not be afraid to give honest answers.

We will go through this questionnaire together. I will read aloud while you mark your answers. If yo have any questions, please raise your hand.

TODAY'S DATE_____

YOUR PRESENT GRADE_____

YOUR BIRTHDATE_____

SEX: (circle one) M F

---

limited to the salaries of the coders figured questionnaires per hour. For larger sample mend that you make use of a computer (see

clude questionnaire printing and collation. estions are changed for different grades, as well as for subsequent test administrations, we have found it practical to use a duplicating machine with costs running approximately $15 per 100 questionnaires. Time costs for the random numbers card, the stapling onto the face sheet and assembling into test administration groupings must be figured on top of this.

(FACE SHEET)

_____ Code Number_____

(test series information, e.g., 1,2,3,. . . etc. or Fall '73, etc.)

STANFORD UNIVERSITY DRUG EVALUATION QUESTIONNAIRE

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At the top of this page you will find a card with your name and a code number printed on it. Each of you has a different code number so that we can compare your answers collected at different times over the next couple of years. Only you and the computer know your code number. No one else will know this questionnaire belongs to you, so you need not be afraid to give honest answers.

We will go through this questionnaire together. I will read aloud while you mark your answers. If you have any questions, please raise your hand.

TODAY'S DATE_____

YOUR PRESENT GRADE_____

YOUR BIRTHDATE_____

SEX: (circle one) M F

112

(Please check (x) one answer for each question)

Code Number

I. Cigarettes

1. (informational question) not to be coded
2. Have you ever smoked a cigarette?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who smoke
   a. yes _____
   b. no _____
4. Do you think you will smoke cig the next year?
   a. yes _____
   b. no _____
   c. don't know _____

II. Beer

1. (informational question) not to be coded
2. Have you ever drunk beer?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who drinks
   a. yes _____
   b. no _____
4. Do you think you will drink beer
   a. yes _____
   b. no _____
   c. don't know _____

III. Wine

1. (informational question) not to be coded
2. Have you ever drunk wine?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who drinks
   a. yes _____
   b. no _____
4. Do you think you will drink wine
   a. yes _____
   b. no _____
   c. don't know _____

answer for each question)

Code Number_____

al question) not to be coded

r smoked a cigarette?

_____ d. 11 to 20 times _____
vice_____ e. 21 times or more _____
mes _____

3. Do you know anyone who smokes?
   a. yes_____
   b. no _____
4. Do you think you will smoke cigarettes within the next year?
   a. yes _____
   b. no _____
   c. don't know_____

l question) not to be coded

r drunk beer?

_____ d. 11 to 20 times _____
vice_____ e. 21 times or more_____
mes _____

3. Do you know anyone who drinks beer?
   a. yes_____
   b. no _____
4. Do you think you will drink beer within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

al question) not to be coded

r drunk wine?

_____ d. 11 to 20 times _____
vice_____ e. 21 times or more _____
mes _____

3. Do you know anyone who drinks wine?
   a. yes_____
   b. no _____
4. Do you think you will drink wine within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

(Please check (x) one answer for each question)

Code Number

IV. **Liquor** (whiskey, gin, rum, vodka, etc.)

1. (informational question) not to be coded
2. Have you ever drunk liquor?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who drinks
   a. yes _____
   b. no _____
4. Do you think you will drink liquo
   a. yes _____
   b. no _____
   c. don't know _____

V. **Marijuana** (hash, pot, weed, grass)

1. (informational question) not to be coded
2. Have you ever smoked marijuana (or hashish)?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who smokes
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will smoke mari within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

VI. **Psychedelic Drugs** (LSD, mescaline, peyote, etc.)

1. (information question) not to be coded
2. Have you ever tried LSD (peyote, mescaline, etc.)?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who uses LS psychedelic drugs)?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try taking L next year? (or other psychedelic d
   a. yes _____
   b. no _____
   c. don't know _____

e answer for each question)

Code Number _____

---

y, gin, rum, vodka, etc.)

nal question) not to be coded

er drunk liquor?

_____ d. 11 to 20 times _____
wice _____ e. 21 times or more _____
imes _____

3. Do you know anyone who drinks liquor?
   a. yes _____
   b. no _____
4. Do you think you will drink liquor within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

, pot, weed, grass)

l question) not to be coded

r smoked marijuana (or hashish)?

_____ d. 11 to 20 times _____
vice _____ e. 21 times or more _____
mes _____

3. Do you know anyone who smokes marijuana (or hashish)?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will smoke marijuana (or hashish) within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

---

gs (LSD, mescaline, peyote, etc.)

question) not to be coded

r tried LSD (peyote, mescaline, etc.)?

_____ d. 11 to 20 times _____
vice _____ e. 21 times or more _____
nes _____

3. Do you know anyone who uses LSD (or other psychedelic drugs)?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try taking LSD within the next year? (or other psychedelic drugs?)
   a. yes _____
   b. no _____
   c. don't know _____

(Please check (x) one answer for each question) Code Number

VII. **Amphetamines** (speed, bennies, dexies, uppers, etc.)

1. (informational question) not to be coded
2. Have you ever tried amphetamines (speed, bennies, etc.)?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who uses a doctor's prescription?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try taking a doctor's prescription within th
   a. yes _____
   b. no _____
   c. don't know _____

VIII. **Barbiturates/Sedatives** (downers, sleeping pills, reds, yellows, rainbows, etc.)

1. (informational question) not to be coded
2. Have you ever taken barbiturates (downers, sleeping pills, reds, etc.) without a doctor's prescription?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
3. Do you know anyone who takes a doctor's prescription?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try taking a doctor's prescription within th
   a. yes _____
   b. no _____
   c. don't know _____

IX. **Inhalants**

1. Have you ever tried sniffing things like glue or paint thinner?
   a. never _____ d. 11 to 20 times _____
   b. once or twice _____ e. 21 times or more _____
   c. 3 to 10 times _____
2. Do you know anyone who sniffs paint thinner?
   a. yes _____
   b. no _____
   c. not sure _____
3. Do you think you will try sniffin paint thinner with the next year?
   a. yes _____
   b. no _____
   c. don't know _____

answer for each question)

Code Number ______

speed, bennies, dexies, uppers, etc.)

l question) not to be coded

r tried amphetamines (speed, bennies, etc.)?

__ ____ d. 11 to 20 times ______

ice ______ e. 21 times or more ______

nes ______

3. Do you know anyone who uses amphetamines without doctor's prescription?
   a. yes ______
   b. no ______
   c. not sure ______
4. Do you think you will try taking amphetamines without a doctor's prescription within the next year?
   a. yes ______
   b. no ______
   c. don't know ______

---

latives (downers, sleeping pills, reds, s, etc.)

al question) not to be coded

r taken barbiturates (downers, sleeping c.) without a doctor's prescription?

______ d. 11 to 20 times ______

vice ______ e. 21 times or more ______

nes ______

3. Do you know anyone who takes barbiturates without a doctor's prescription?
   a. yes ______
   b. no ______
   c. not sure ______
4. Do you think you will try taking barbiturates without a doctor's prescription within the next year?
   a. yes ______
   b. no ______
   c. don't know ______

---

er tried sniffing things like glue or r?

______ d. 11 to 20 times ______

wice ______ e. 21 times or more ______

imes ______

2. Do you know anyone who sniffs things like glue or paint thinner?
   a. yes ______
   b. no ______
   c. not sure ______
3. Do you think you will try sniffing things like glue or paint thinner with the next year?
   a. yes ______
   b. no ______
   c. don't know ______

(Please check (x) one answer for each question)

Code Number

X. **Heroin**

1. (informational question) not to be coded
2. Have you ever tried heroin?
   a. never _____
   b. once or twice _____
   c. 3 to 10 times _____
   d. 11 to 20 times _____
   e. 21 times or more _____
3. Do you know anyone who uses
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try using
   the next year?
   a. yes _____
   b. no _____
   c. don't know _____

XI. **Cocaine**

1. (informational question) not to be coded
2. Have you ever tried cocaine?
   a. never _____
   b. once or twice _____
   c. 3 to 10 times _____
3. Do you know anyone who uses
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try using
   the next year?
   a. yes _____
   b. no _____
   c. don't know _____

answer for each question)

Code Number _____

question) not to be coded

tried heroin?

_____ d. 11 to 20 times _____

ice _____ e. 21 times or more _____

es _____

3. Do you know anyone who uses heroin?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try using heroin within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

question) not to be coded

tried cocaine?

_____

ice _____

es _____

3. Do you know anyone who uses cocaine?
   a. yes _____
   b. no _____
   c. not sure _____
4. Do you think you will try using cocaine within the next year?
   a. yes _____
   b. no _____
   c. don't know _____

120

ADDENDA QUESTIONS

Do you think your use of any of the substances listed below has *INCREASED* during the l
(If yes, please check)

tobacco	_____	liquor	_____	amphetamines (stimulants)	_____	heroin/
beer	_____	marijuana	_____	barbiturates (sedatives)	_____	cocaine
wine	_____	hallucinogens (LSD, etc.)	_____	inhalants (glue, etc.)	_____	

Do you think your use of any of the substances listed below has *DECREASED* during the
(If yes, please check)

tobacco	_____	liquor	_____	amphetamines (stimulants)	_____	heroin/
beer	_____	marijuana	_____	barbiturates (sedatives)	_____	cocaine
wine	_____	hallucinogens (LSD, etc.)	_____	inhalants (glue, etc.)	_____	

PART TWO
STANFORD DRUG EVALUATION INTERVIEW FOR YOUNG CHILDREN

INSTRUMENT DESCRIPTION

Below the fifth grade (approximately age ten), the evaluator faces two problems: 1) some children are not yet capable of responding to a written instrument in a group setting, and 2) young children must be tested in such a manner that they do not receive new information that might stimulate them to experiment with disapproved drugs. The individual Drug Evaluation Interview was designed two problems.

The instrument was originally used involving 900 children in grades two thr which takes approximately five to ten m on a total set of twenty-two color pho

ADDENDA QUESTIONS

Do you think your use of any of the substances listed below has *INCREASED* during the last six months? (If yes, please check)

liquor _____	amphetamines (stimulants) _____	heroin/opiates _____
marijuana _____	barbiturates (sedatives) _____	cocaine _____
hallucinogens (LSD, etc.) _____	inhalants (glue, etc.) _____	

Do you think your use of any of the substances listed below has *DECREASED* during the last six months? (If yes, please check)

liquor _____	amphetamines (stimulants) _____	heroin/opiates _____
marijuana _____	barbiturates (sedatives) _____	cocaine _____
hallucinogens (LSD, etc.) _____	inhalants (glue, etc.) _____	

PART TWO
STANFORD DRUG EVALUATION INTERVIEW FOR YOUNG CHILDREN

STRUMENT DESCRIPTION

grade (approximately age ten), the evaluator s: 1) some children are not yet capable of itten instrument in a group setting, and 2) t be tested in such a manner that they do not tion that might stimulate them to experiment with disapproved drugs. The individually administered Stanford Drug Evaluation Interview was designed specifically to solve these two problems.

The instrument was originally used in a longitudinal study involving 900 children in grades two through four. The interview, which takes approximately five to ten minutes per child, focuses on a total set of twenty-two color photographs. There are two

photographs for each of eleven drug categories. The drug category sequence begins with coffee and progresses through tobacco, beer, wine, liquor, marijuana, hallucinogens, amphetamines, barbiturates, inhalants and heroin (see photograph descriptions given in Appendix C of this chapter).

The areas of inquiry are:

- Recognition
- Availability
- Experience
- Intentions

If a child does not recognize the drug featured in the photographs, *no questions are asked* and the interviewer proceeds to the next drug category.

For those embarking on a longitudinal study, we recommend that a picture set be used no more than twice. Otherwise children become bored and lose interest in the interview.

CONFIDENTIALITY

Confidentiality must be guaranteed all interviewees. A cross-sectional study can employ simple sequential code numbers (e.g., 001, 002, 003, etc.), but student identification is much more complex in a longitudinal study where data gathered about the same person at different times must be compared. The identity protection system used was described in Part One of this chapter.

Unlike the other instruments presented in this handbook, the Stanford Drug Evaluation Interview for Young Children requires that a child report possible illicit drug use directly to an unfamiliar adult. For this reason, we strongly recommend that:

- The children not be questionned until they are familiar with the drug evaluation program, its aims and its personnel. (The parents also should be informed in accordance with existing district policy. This aspect of the evaluation process is covered in Chapter 2 of the handbook. However, it bears repeating here.)
- The children sufficiently understand the security system employed to know that their responses are confidential and their participation voluntary.
- The interviewers are carefully selec the effects and side effects of each d use of the instrument.

RELIABILITY

A reliability study was conducted on da Stanford Drug Evaluation Interview at the appears with the Stanford Drug Evaluation C of the size of our total sample (N=3300), w use an interview instrument with older c certainly no reason why it could not be u group.

The size of our sample required that written, group-administered questionnaire a the advice of educators, checked out by pret sion, grade five was designated. This switcho that we conduct a substudy in order to dete would have on drug reporting. Our initial s grade students indicated that some children use on the written instrument than the pic substudy of fifth graders (N=29), comparin interviewer was present to when one was a the written and pictorial instruments, indi increase in reported use was more likely instrument format than to the presence interviewer. Thus it appears that at this grad (written vs. pictures) which illicits more r rather than the absence (as is the case in th adult to whom the child reports drug use.

INTERVIEW PROCEDU

In our study, the procedure is to process o time using from three to five interviewers number of interviewers needed varies accor the ability of the school to provide intervie are interviewed privately in separate rooms s regular classroom teacher assists by introdu and monitoring the flow of children in and ou

leven drug categories. The drug category
ee and progresses through tobacco, beer,
hallucinogens, amphetamines, barbitur-
n (see photograph descriptions given in
r).
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Interview for Young Children requires
e illicit drug use directly to an unfamiliar
strongly recommend that:

be questionned until they are familiar
valuation program, its aims and its
parents also should be informed in
xisting district policy. This aspect of the
s is covered in Chapter 2 of the hand-
bears repeating here.)

iciently understand the security system
w that their responses are confidential
tion voluntary.

- The interviewers are carefully selected, knowledgeable in the effects and side effects of each drug, and trained in the use of the instrument.

RELIABILITY

A reliability study was conducted on data collected with the Stanford Drug Evaluation Interview at the fourth grade level and appears with the Stanford Drug Evaluation Questionnaire. Because of the size of our total sample (N=3300), we did not attempt to use an interview instrument with older children, but there is certainly no reason why it could not be used with an older age group.

The size of our sample required that we switch over to a written, group-administered questionnaire as soon as possible. On the advice of educators, checked out by pretesting for comprehension, grade five was designated. This switchover, however, required that we conduct a substudy in order to determine what effect this would have on drug reporting. Our initial substudy with 27 fifth grade students indicated that some children reported slightly more use on the written instrument than the pictorial one. A second substudy of fifth graders (N=29), comparing responses when an interviewer was present to when one was absent and using both the written and pictorial instruments, indicated that the slight increase in reported use was more likely due to the change in instrument format than to the presence or absence of an interviewer. Thus it appears that at this grade level it is the format (written vs. pictures) which illicits more reporting on drug use rather than the absence (as is the case in the questionnaire) of an adult to whom the child reports drug use.

INTERVIEW PROCEDURE

In our study, the procedure is to process one complete class at a time using from three to five interviewers simultaneously. The number of interviewers needed varies according to class size and the ability of the school to provide interview locations; children are interviewed privately in separate rooms spaced well apart. The regular classroom teacher assists by introducing the interviewers and monitoring the flow of children in and out.

Each interviewer is assigned a color for the day—a piece of heavy colored paper pinned on the clothing suffices very well. A second piece becomes a "travel ticket." When one child completes the interview, he returns to the classroom and presents the ticket to a child who has not been seen. This child leaves the room and goes to the interviewer with the matching color.

INSTRUCTIONS FOR ADMINISTRATION

The recording form reproduced on the following page is designed to collect and code the data in as concise a form as possible. The interviewer begins by showing the two color photographs of drug category one (coffee) to the child and asking.

1. (Recognition): "What can you tell me about these pictures?"

If the child does not show any recognition, he stops and proceeds to the next drug category. The name of the drug is not revealed nor are any further questions asked about it. Common sources for recognition are television, newspapers, supermarkets, drugstores, friends, family, etc.

2. (Availability): "Do you know anyone who uses_____?"

If there is recognition of a drug, this question is asked to determine whether the child has had actual opportunity to use the substance. The goal is *not* to investigate a child's family or friends, and the interviewer should avoid any identification of specific people.

3. (Experience): "Have you ever tried_____?"

If the response is "yes," find out approximately how often and enter the frequency figure in the correct box.

4. (Intention): "Do you think you will try_____ during the next year or so?"

This last question is asked to ascertai either begin experimentation or contin taken as indicators of changing attitude the thrust of an ongoing drug education

General Administration Directions

Record only nonmedical use of amph and deliberate inhalation of glue and the

TABULATING RESU

The tabulation of replies depends (cross-sectional vs. longitudinal) and th under 200, a simple tally of the resp question can be easily handled. For lar computer should certainly be considered.

COSTS

Cost figures will include:

1) Interviewers' salaries: figured or between $2.50 to $5.00 dep location.
2) Photograph sets. to reproduce about $70. If you make up yo film, touch-up and payment to a
3) Recording forms: a minimal ex ately $5 per 100 copies using a d
4) Tabulation:
   a) hand tally: almost exclusivel range from approximately $ Coders with the Stanford average of 12 interviews per h
   b) computer costs are open-ende a thorough discussion of comp

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r pinned on the clothing suffices very well. A
es a "travel ticket." When one child completes
turns to the classroom and presents the ticket
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"Have you ever tried_____?"

yes," find out approximately how often and gure in the correct box.

Do you think you will try_____
t year or so?"

This last question is asked to ascertain the child's willingness to either begin experimentation or continue actual use. Responses, taken as indicators of changing attitudes, might be used to direct the thrust of an ongoing drug education program.

General Administration Directions

Record only nonmedical use of amphetamines and barbiturates and deliberate inhalation of glue and the like.

TABULATING RESULTS

The tabulation of replies depends upon the type of study (cross-sectional vs. longitudinal) and the size of the sample. For under 200, a simple tally of the response frequency for each question can be easily handled. For larger samples, the use of a computer should certainly be considered.

COSTS

Cost figures will include:

1) Interviewers' salaries: figured on an hourly basis, varying between $2.50 to $5.00 depending on geographical location.
2) Photograph sets: to reproduce one complete set costs about $70. If you make up your own, add the cost of film, touch-up and payment to a photographer.
3) Recording forms: a minimal expense running approximately $5 per 100 copies using a duplicating machine.
4) Tabulation:
   a) hand tally. almost exclusively salary expenses which range from approximately $2.50 to $3.50 per hour. Coders with the Stanford project can process an average of 12 interviews per hour.
   b) computer costs are open-ended (refer to Chapter 9 for a thorough discussion of computer scoring).

STANFORD DRUG EVALUATION INTERVIEW RECORDING FORM

Identification Code _____ Grade _____ Date _____

Sex (circle): M F Interviewer _____

Date of Birth _____ Teacher _____ Test Series _____

1. What can you tell me about this (these) picture(s)?
   (*If no recognition indicated, stop here and move to next photograph category.*)
2. Do you know anyone who uses _____ ?
3. Have you ever tried _____ ?
4. Do you think you will try _____ during the next year or so?

yes = check (√) not sure = ? no = no DR/NA = leave blank

For question 3, write in frequencies, for categories VII and IX, record non-medical use only.

	I Coffee	II Tobacco	III Beer	IV Wine	V Alcohol	VI Mari-juana	VII LSD	VIII Amphet-amines	IX Barbitu-rates
1. Knowledge indicated									
2. Opportunity/ Exposure									
3. Experience/ Use									
4. Possible future use (non-user)									
5. Possible future use (user)									

Comments:

STANFORD DRUG EVALUATION INTERVIEW RECORDING FORM

Grade _____ Date _____

Interviewer _____

Teacher _____ Test Series _____

about this (these) picture(s)?

icated, stop here and move to next photograph category.)

who uses _____ ?

_____ ?

l try _____ during the next year or so?

ot sure = ? no = no DR/NA = leave blank

frequencies; for categories VII and IX, record non-medical use only.

ee	II Tobacco	III Beer	IV Wine	V Alcohol	VI Mari-juana	VII LSD	VIII Amphet-amines	IX Barbitu-rates	X Glue	XI Heroin

APPENDIX A
STANFORD UNIVERSITY DRUG EDUCATION QUESTIONNAIRE
SAMPLE INFORMATIONAL QUESTIONS

Following are sample questions for use in the main questionnaire which is presented in Part One of this chapter. Correct responses for each question are checked.

It is recommended that anyone administering the questionnaire with informational items first collect the completed questionnaires, then discuss the answers to the informational questions with the class (e.g., "how many of you thought _____ was the correct answer?"). This technique allows you to augment the correct answers with additional information, answer any questions the respondents may pose and utilize the remainder of a class period, if time remains.

I. CIGARETTES:

Fifth/sixth grades

As far as we know, the first people to smoke tobacco were:

a) Egyptians____ c) American Indians _x_
b) Chinese ____ d) don't know ____

Filters make cigarettes safe:

a) true ____ c) don't know____
b) false _x_

Seventh/eighth grades

There is no risk in smoking cigarettes as long as you don't inhale.

a) true ____ c) don't know____
b) false _x_

People run less risk of cancer if they give up smoking:

a) true _x_ c) don't know____
b) false ____

High School

The active chemical principle in tobacco is:

a) caffeine ____ c) nicotine _x_
b) nembutal ____ d) don't know____

Whether or not you've smoked a long time, your risks go down when you quit:

a) true _x_ c) don't know____
b) false ____

II. BEER:

Fifth/sixth grades

Beer is made in places called:

a) wineries ____ c)
b) breweries _x_ d)

One necessary ingredient of beer is:

a) nutmeg ____ c)
b) yeast _x_ d)

Seventh/eighth grades

As far as we know beer was first used aro
the country of:

a) Egypt ____ c)
b) Turkey _x_ d)

The most popular alcoholic drink in our c

a) beer _x_ c)
b) wine ____ d)

High School

Most beer made in the United States contai

a) 12%____ c)
b) 20%____ d)

All alcoholic beverages, whether wine, bee

a) wood alcohol ____ c)
b) denatured alcohol ____ d)

III. WINE:

Fifth/sixth grades

Wine is usually made from:

a) grapes _x_ c) o
b) tomatoes____ d) d

Champagne is a kind of wine:

a) true _x_ c) d
b) false ____

APPENDIX A
STANFORD UNIVERSITY DRUG EDUCATION QUESTIONNAIRE
SAMPLE INFORMATIONAL QUESTIONS

mple questions for use in the main question-esented in Part One of this chapter. Correct question are checked.

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es

ow, the first people to smoke tobacco were:
c) American Indians _x_
d) don't know ____

arettes safe:
c) don't know ____

grades

in smoking cigarettes as long as you don't inhale:
c) don't know ____

risk of cancer if they give up smoking:
c) don't know ____

ical principle in tobacco is:
c) nicotine _x_
d) don't know ____

t you've smoked a long time, your risks go down
c) don't know ____

II. BEER:

Fifth/sixth grades

Beer is made in places called:
a) wineries ____ c) canneries ____
b) breweries _x_ d) don't know ____

One necessary ingredient of beer is:
a) nutmeg ____ c) grapes ____
b) yeast _x_ d) don't know ____

Seventh/eighth grades

As far as we know beer was first used around 6400 B.C. in what is now the country of:
a) Egypt ____ c) Greece ____
b) Turkey _x_ d) don't know ____

The most popular alcoholic drink in our country is:
a) beer _x_ c) whiskey ____
b) wine ____ d) don't know ____

High School

Most beer made in the United States contains about ____% pure alcohol:
a) 12% ____ c) 4% _x_
b) 20% ____ d) don't know ____

All alcoholic beverages, whether wine, beer, or liquor contain:
a) wood alcohol ____ c) ethyl alcohol _x_
b) denatured alcohol ____ d) don't know ____

III. WINE:

Fifth/sixth grades

Wine is usually made from:
a) grapes _x_ c) oatmeal ____
b) tomatoes ____ d) don't know ____

Champagne is a kind of wine:
a) true _x_ c) don't know ____
b) false ____

Seventh/eighth grades

In early times, battles were often lost because the soldiers had too much wine:

a) true __x__ c) don't know ____
b) false ____

The amount of alcohol in a 12 oz. glass of beer is the same as in a 4 oz. glass of wine:

a) true __x__ c) don't know ____
b) false ____

High School

Most of the wines in the United States contain about ____% alcohol:

a) 6% ____ c) 20% ____
b) 12% __x__ d) don't know ____

Wines are made by a process called:

a) carbonation ____ c) fermentation __x__
b) distillation ____ d) don't know ____

IV. LIQUOR:

Fifth/sixth grades

The alcohol in beer, wine and whiskey is the same chemical compound:

a) true __x__ c) don't know ____
b) false ____

Alcohol is a depressant drug that can make you very sleepy:

a) true __x__ c) don't know ____
b) false ____

Seventh/eighth grades

Alcohol evaporates at a lower temperature than does water:

a) true __x__ c) don't know ____
b) false ____

If a person rapidly gulps down an unusually large amount of alcohol (more than a pint), it may kill him:

a) true __x__ c) don't know ____
b) false ____

High School

The amount of alcohol in an average drink of different alcoholic beverages (beer, wine, liquor) is:

a) very different ____ c) don't know ____
b) about the same __x__

Since the rate of absorption of alcohol is d
what you mix it with, soda or ginger ale will:

a) slow absorption ____ c) spee
b) not affect absorption ____ d) don'

V. MARIJUANA:

Fifth/sixth grades

Marijuana (pot, weed, grass, hash) comes from:

a) a tree ____ c) a pl
b) a root ____ d) don'

Marijuana is usually:

a) smoked __x__ c) sniff
b) chewed ____ d) don'

Seventh/eighth grades

Compared with marijuana, hashish is:

a) much less strong ____ c) muc
b) about as strong ____ d) don'

In the past marijuana plants were used to mak

a) hay ____ c) rope
b) alfalfa ____ d) don'

High School

The suspected active chemical principle in mar

a) PCP ____ c) THC
b) STP ____ d) don'

VI. PSYCHEDELIC DRUGS:

Fifth/sixth grades

LSD (acid) was discovered accidentally by a sc

a) true __x__ c) don'
b) false ____

An average dose of LSD, amounting to a ti
an effect lasting from 8 to 12 hours:

a) true __x__ c) don'
b) false ____

s were often lost because the soldiers had

c) don't know ____

l in a 12 oz. glass of beer is the same as in a

c) don't know ____

United States contain about ____% alcohol:

c) 20% ____

d) don't know ____

ocess called:

c) fermentation __x__

d) don't know ____

e and whiskey is the same chemical compound:

c) don't know ____

drug that can make you very sleepy:

c) don't know ____

lower temperature than does water:

c) don't know ____

os down an unusually large amount of alcohol ay kill him:

c) don't know ____

ol in an average drink of different alcoholic quor) is:

c) don't know ____

Since the rate of absorption of alcohol is different depending upon what you mix it with, soda or ginger ale will:

a) slow absorption ____ c) speed absorption __x__

b) not affect absorption ____ d) don't know ____

V. MARIJUANA:

Fifth/sixth grades

Marijuana (pot, weed, grass, hash) comes from:

a) a tree ____ c) a plant __x__

b) a root ____ d) don't know ____

Marijuana is usually:

a) smoked __x__ c) sniffed ____

b) chewed ____ d) don't know ____

Seventh/eighth grades

Compared with marijuana, hashish is:

a) much less strong ____ c) much stronger __x__

b) about as strong ____ d) don't know ____

In the past marijuana plants were used to make:

a) hay ____ c) rope __x__

b) alfalfa ____ d) don't know ____

High School

The suspected active chemical principle in marijuana is:

a) PCP ____ c) THC __x__

b) STP ____ d) don't know ____

VI. PSYCHEDELIC DRUGS:

Fifth/sixth grades

LSD (acid) was discovered accidentally by a scientist in Switzerland:

a) true __x__ c) don't know ____

b) false ____

An average dose of LSD, amounting to a tiny speck, usually has an effect lasting from 8 to 12 hours:

a) true __x__ c) don't know ____

b) false ____

Seventh/eighth grades

LSD was not made an illegal drug in this country until.

a) 1945 ____ c) 1967 __x__
b) 1930 ____ d) don't know ____

LSD can best be compared with:

a) alcohol ____ c) mescaline __x__
b) heroin ____ d) don't know ____

High School

Standard doses of LSD are measured in:

a) milligrams ____ c) micrometers ____
b) micrograms __x__ d) don't know ____

One ounce of LSD is enough to provide ____ average doses.

a) 300,000 __x__ c) 10,000 ____
b) 500 ____ d) don't know ____

VII. AMPHETAMINES:

Fifth/sixth grades

Amphetamines are nicknamed "speed" because.

a) they make people drive faster ____
b) they give quick pain relief ____
c) they speed up a person's heart, breathing etc. __x__
d) don't know ____

Amphetamines are most likely to keep an adult:

a) quiet ____ c) awake __x__
b) pain free ____ d) don't know ____

Seventh/eighth grades

In the United States today, the only professional sport with written rules about the use of a drug is:

a) football ____ c) boxing ____
b) horse racing __x__ d) don't know ____

Which drug does not belong in a list of stimulants?

a) cocaine ____ c) benzedrine ____
b) seconal __x__ d) don't know ____

High School

Amphetamines have an action on the body which is almost directly opposite to that of:

a) cocaine ____ c) alcohol __x__
b) LSD ____ d) don't know ____

Amphetamines produce many effects throu
dilation of the pupils, and increased blood pr

a) true __x__ c) do
b) false ____

VIII. BARBITURATES/SEDATIVES:

Fifth/sixth grades

Another drug that slows down the body like

a) coffee ____ c) tob
b) alcohol __x__ d) do

Sedatives, most commonly the barbiturates
often for:

a) sleep __x__ c) hic
b) alertness ____ d) do

Seventh/eighth grades:

When prescribed by doctors, barbiturates are

a) true ____ c) do
b) false __x__

The effects of barbiturates (sedatives) are mo

a) LSD ____ c) cof
b) alcohol __x__ d) do

High School

The following list includes a drug that is *not* a

a) chloral hydrate ____ d) tuni
b) seconal (reds) ____ e) dex
c) nembutal (yellows) ____ f) don

Withdrawal from barbiturates is much more
from heroin:

a) true __x__ c) don
b) false ____

IX. INHALANTS:

(No informational questions are asked for this

des

an illegal drug in this country until.

c) 1967 __x__
d) don't know ____

ompared with:

c) mescaline __x__
d) don't know ____

LSD are measured in:

c) micrometers ____
d) don't know ____

is enough to provide ____ average doses.

c) 10,000 ____
d) don't know ____

nicknamed "speed" because:

le drive faster ____
pain relief ____
person's heart, breathing etc. __x__
____

most likely to keep an adult:

c) awake __x__
d) don't know ____

des

es today, the only professional sport with written of a drug is:

c) boxing ____
d) don't know ____

ot belong in a list of stimulants?

c) benzedrine ____
d) don't know ____

e an action on the body which is almost directly

c) alcohol __x__
d) don't know ____

Amphetamines produce many effects throughout the body including dilation of the pupils, and increased blood pressure and heart rate:

a) true __x__ c) don't know ____
b) false ____

VIII. BARBITURATES/SEDATIVES:

Fifth/sixth grades

Another drug that slows down the body like barbiturates do, is:

a) coffee ____ c) tobacco ____
b) alcohol __x__ d) don't know ____

Sedatives, most commonly the barbiturates, are medically used most often for:

a) sleep __x__ c) hiccups ____
b) alertness ____ d) don't know ____

Seventh/eighth grades:

When prescribed by doctors, barbiturates are not a habit-forming drug:

a) true ____ c) don't know ____
b) false __x__

The effects of barbiturates (sedatives) are most like the effects of:

a) LSD ____ c) coffee ____
b) alcohol __x__ d) don't know ____

High School

The following list includes a drug that is *not* a sedative. Which is it?

a) chloral hydrate ____ d) tuninal (rainbows) ____
b) seconal (reds) ____ e) dexedrine __x__
c) nembutal (yellows) ____ f) don't know ____

Withdrawal from barbiturates is much more serious than withdrawal from heroin:

a) true __x__ c) don't know ____
b) false ____

IX. INHALANTS:

(No informational questions are asked for this category).

X. HEROIN:

Fifth/sixth grades

Heroin was once used in hospitals as a pain killer:

a) true __x__ c) don't know ____
b) false ____

Heroin and morphine are made from:

a) the opium poppy __x__ c) popcorn ____
b) the oriental poppy ____ d) don't know ____

Seventh/eighth grades

Heroin is about ____ as strong as morphine:

a) twice ____ c) six times __x__
b) twenty times ____ d) don't know ____

At the present time, heroin is not used medically in this country:

a) true __x__ c) don't know ____
b) false ____

High School

At the present time the British government supplies heroin and methadone to registered addicts for a small charge.

a) true __x__ c) don't know ____
b) false ____

Heroin was once used in hospitals as a cure for patients physically dependent on morphine:

a) true __x__ c) don't know ____
b) false ____

XI. COCAINE:

Fifth/sixth grades

Cocaine comes from:

a) coca-cola ____ c)
b) cactus ____ d)

Our knowledge of coca first came from the

a) Mexico ____ c)
b) New Mexico ____ d)

Seventh/eighth grades

Coca was at one time an ingredient of the

a) true __x__ c)
b) false ____

Cocaine is an alkaloid derived from the lea

a) coca plant __x__ c)
b) coffee plant ____ d)

High School

Cocaine was formerly used medicinally (it

a) local anesthetic __x__ c)
b) cough syrup ____ d)

The effects of cocaine are most like the eff

a) heroin ____ c)
b) alcohol ____ d)

ed in hospitals as a pain killer:

c) don't know ____

ne are made from:

py __x__ c) popcorn ____

ppy ____ d) don't know ____

des

__as strong as morphine:

___ c) six times __x__

___ d) don't know ____

e, heroin is not used medically in this country:

c) don't know ____

e the British government supplies heroin and metha-addicts for a small charge.

c) don't know ____

used in hospitals as a cure for patients physically phine:

c) don't know ____

XI. COCAINE:

Fifth/sixth grades

Cocaine comes from:

a) coca-cola ____ c) the coca plant __x__

b) cactus ____ d) don't know ____

Our knowledge of coca first came from the Indians of:

a) Mexico ____ c) the Andes __x__

b) New Mexico ____ d) don't know ____

Seventh/eighth grades

Coca was at one time an ingredient of the soft drink, coca-cola:

a) true __x__ c) don't know ____

b) false ____

Cocaine is an alkaloid derived from the leaves of the:

a) coca plant __x__ c) cocao tree ____

b) coffee plant ____ d) don't know ____

High School

Cocaine was formerly used medicinally (it is rare today) as a:

a) local anesthetic __x__ c) cosmetic ____

b) cough syrup ____ d) don't know ____

The effects of cocaine are most like the effects of:

a) heroin ____ c) the amphetamines __x__

b) alcohol ____ d) don't know ____

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APPENDIX B
RELIABILITY DATA

TABLE 1

Nominator Sample Reliability Table

	4th Grade			6th Grade		
	(N = 14) Friends	(N = 9) Siblings	(N = 10) Examples/Models	(N = 14) Friends	(N = 7) Siblings	(N = 5) Examples/Models
Tobacco:			2 no answers			
complete agreement	4	4	2	12	5	1
probable agreement	5 } 64%	0 } 44%	1 } 37%	1 } 93%	0 } 71%	4 } 100%
probable disagreement	3	2	3	0	1	0
disagreement	2 } 36%	3 } 56%	2 } 63%	1 } 7%	1 } 29%	0
Alcohol:			2 no answers			
complete agreement	3	9	0	3	6	1
probable agreement	2 } 36%	0 } 100%	2 } 25%	3 } 43%	0 } 89%	0 } 20%
probable disagreement	1	0	0	2	0	2
disagreement	8 } 64%	0	6 } 75%	6 } 57%	1 } 11%	2 } 80%
Marijuana:		1 no answer	2 no answers		1 no answer	
complete agreement	12	8	8	14	6	4
probable agreement	2 } 100%	0 } 100%	0 } 100%	0 } 100%	0 } 100%	1 } 100%
probable disagreement	0	0	0	0	0	0
disagreement	0	0	0	0	0	0
Inhalants:			2 no answers		1 no answer	
complete agreement	13	9	8	14	6	3
probable agreement	1 } 100%	0 } 100%	0 } 100%	0 } 100%	0 } 100%	2 } 100%
probable disagreement	0	0	0	0	0	0
disagreement	0	0	0	0	0	0
Other Drugs: *			2 no answers		1 no answer	
complete agreement	13	9	8	14	6	4
probable agreement	1 } 100%	0 } 100%	0 } 100%	0 } 100%	0 } 100%	1 } 100%
probable disagreement	0	0	0	0	0	0
disagreement	0	0	0	0	0	0

* Other drugs include cocaine, heroin, and non-prescription use of amphetamines and barbiturates.

TABLE 2

Nominee/Classmate Sample Reliability Table

	4th Grade		6th Grade	
	Friends (N = 55)	Peers (N = 56)	Friends (N = 52)	Peers (N = 56)
Tobacco:		4 no answers	1 no answer	7 no answers
Complete agreement	30	28	27	11
Probable agreement	11 } 74%	14 } 80%	8 } 68%	6 } 60%
Probable disagreement	9	3	11	6
Disagreement	5 } 26%	7 } 20%	5 } 32%	5 } 40%
Alcohol:		5 no answers	1 no answer	4 no answers
Complete agreement	17	15	12	4
Probable agreement	8 } 45%	8 } 45%	6 } 35%	7 } 35%
Probable disagreement	10	19	15	13
Disagreement	20 } 55%	9 } 55%	18 } 65%	7 } 65%
Marijuana:				2 no answers
Complete agreement	51	48	49	25
Probable agreement	4 } 100%	5 } 96%	3 } 100%	7 } 97%
Probable disagreement	0	1	0	1
Disagreement	0	2 } 4%	0	0 } 3%
Inhalants:				
Complete agreement	52	51	46	28
Probable agreement	1 } 96%	4 } 98%	4 } 96%	6 } 97%
Probable disagreement	2	0	2	1
Disagreement	0 } 4%	1 } 2%	0 } 4%	0 } 3%
*Other Drugs:**				
Complete agreement	53	48	47	25
Probable agreement	1 } 98%	6 } 98%	2 } 94%	4 } 83%
Probable disagreement	0	2	3	5
Disagreement	1 } 2%	0 } 2%	0 } 6%	1 } 17%

* Other drugs include cocaine, heroin, and non-prescription use of amphetamines and barbiturates.

APPENDIX C
PREPARATION OF PHOTOGRAPH SETS

Those wishing to utilize the Stanford Drug Evaluation Instrument for Young Children are encouraged to read the following descriptions before preparing their own pictorial test portfolio. Local police departments can be of assistance in posing and shooting the pictures. For example, the photograph set described below was taken in the police station foyer under the baleful eye of a police officer who provided the Stanford research staff with confiscated drug samples. The researchers provided the photographer, camera, paraphernalia, props and models.

In finished form the Stanford Instrument for Young Children is a series of 8½" x 11" color photographs, each inserted in a 3-holed clear plastic page protector, and placed in a looseleaf notebook; the set of two photographs for any given category should be on facing pages so that they are both visible.

Category I: *Coffee* The first photograph shows a subject seated at a table holding a mug of black coffee. In the center of the photograph is a clear glass coffee pot which is half-filled with black coffee. A teaspoon is also visible on the table. The second photograph shows, centrally placed on the table, the same coffee pot surrounded by two teaspoons, two empty coffee mugs, cream and sugar containers, a canister of ground coffee and a jar of freeze-dried coffee.

Category II: *Cigarettes.* The first photograph is a full face view of a subject lighting a filter cigarette. The second photograph is a close-up of an ashtray filled with stubbed out cigarette butts; a cigarette is burning on the edge of the ashtray. Also centrally located in the photograph are an open book of matches and an open pack of filter cigarettes. Several cigarettes are extended from the pack.

Category III: *Beer.* The first photograph shows two subjects drinking glasses of beer while seated in a relaxed manner on the steps of a front porch. Between the subjects is a six-pack of beer in glass bottles. The second photograph shows a close-up of a glass filled with beer; adjacent to the beer glass are an empty beer bottle and an unopened can of beer. The wo readable.

Category IV: *Wine.* The first photo seated at a table upon which is a partia and two wine glasses filled with red wi white wine is also visible in the backg The subjects are preparing slices of fren are placed on cutting boards between photograph is a close-up of a half-fille background are empty bottles of red and

Category V: *Liquor.* The first photog subjects standing behind a table; an a sation, with the young people. The sett congenial, and all subjects are drinking d the table are half-empty bottles of vermo and ginger ale. An open ice bucket is ad second photograph is a close-up of th bucket in same position). In the forefro martini in appropriate glasses.

Category VI: *Marijuana.* The first pho subject inhaling smoke from a marijua holding between his lips. The second ph an ounce of marijuana in a rumpled plas water pipe, and an open package of ciga visible). In the foreground, spread out chunks of hashish and uncleaned mariju visible.)

Category VII: *Hallucinogens.* The first of blue, rose and yellow LSD tablets (som halves or fourths, others remain unbroken mushroom. The second photograph show three of which are inside a square plastic placed around the outside of the box.

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rs, a canister of ground coffee and a jar of

rettes. The first photograph is a full face view
a filter cigarette. The second photograph is a
ray filled with stubbed out cigarette butts, a
on the edge of the ashtray. Also centrally
ograph are an open book of matches and an
cigarettes. Several cigarettes are extended from

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beer while seated in a relaxed manner on the
ch. Between the subjects is a six-pack of beer
second photograph shows a close-up of a glass
cent to the beer glass are an empty beer bottle
and an unopened can of beer. The word "beer" is never clearly readable.

Category IV: *Wine.* The first photograph shows two subjects seated at a table upon which is a partially full bottle of red wine and two wine glasses filled with red wine. An unopened bottle of white wine is also visible in the background of the photograph. The subjects are preparing slices of french bread and cheese which are placed on cutting boards between the subjects. The second photograph is a close-up of a half-filled glass of red wine. In the background are empty bottles of red and white wine.

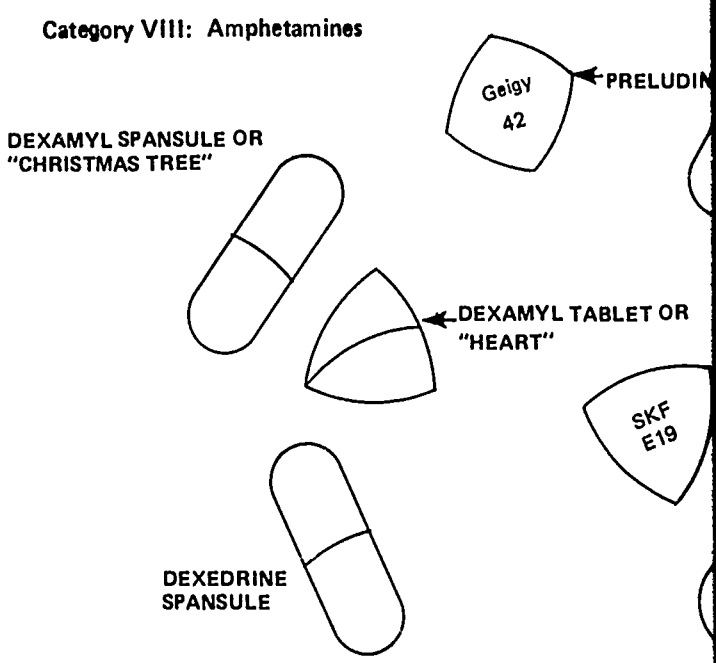
Category V. *Liquor.* The first photograph shows three youthful subjects standing behind a table; an adult is seated, in conversation, with the young people. The setting portrayed is informal, congenial, and all subjects are drinking different mixed drinks. On the table are half-empty bottles of vermouth, gin, scotch, bourbon and ginger ale. An open ice bucket is adjacent to the bottles. The second photograph is a close-up of the table (bottles and ice bucket in same position). In the forefront are a whiskey sour and martini in appropriate glasses.

Category VI: *Marijuana.* The first photograph is a side view of a subject inhaling smoke from a marijuana cigarette which he is holding between his lips. The second photograph is a close-up of an ounce of marijuana in a rumpled plastic sandwich bag, a small water pipe, and an open package of cigarette paper (brand name visible). In the foreground, spread out on the table, are small chunks of hashish and uncleaned marijuana (seeds and stems are visible.)

Category VII: *Hallucinogens.* The first photograph is a close-up of blue, rose and yellow LSD tablets (some tablets are broken into halves or fourths, others remain unbroken). Also visible is a peyote mushroom. The second photograph shows the same pills, two or three of which are inside a square plastic pill box, while others are placed around the outside of the box.

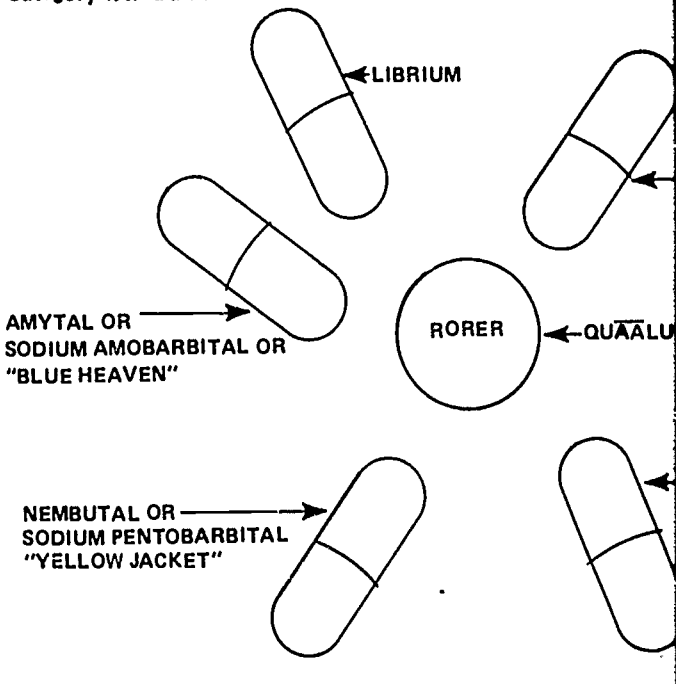
Category VIII: *Amphetamines.* The first photograph shows a subject in whose extended hand are several red, white and yellow pills. (The colors should be vivid and clearly distinguishable, even if color retouching is done by hand using a felt pen.) The second photograph shows seven different types of amphetamines arranged according to the diagram on the right. Manufacturers' markings are clearly visible on a number of the samples photographed.

Category VIII: Amphetamines



Category IX: *Barbiturates.* Both photographs resemble those described for Category 8; the pills differ, however. In the first photograph the subject is holding red-and-blue capsules, red capsules, and white pills. In the second photograph, various barbiturates are arranged according to the diagram on the right.

Category IX: Barbiturates



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in whose extended hand
and yellow pills. (The
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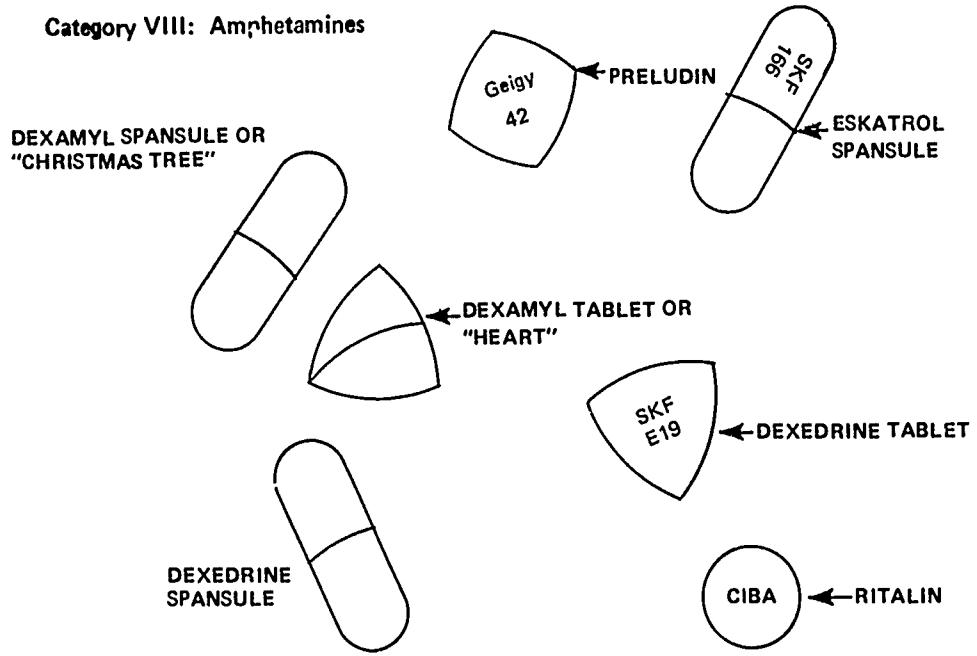

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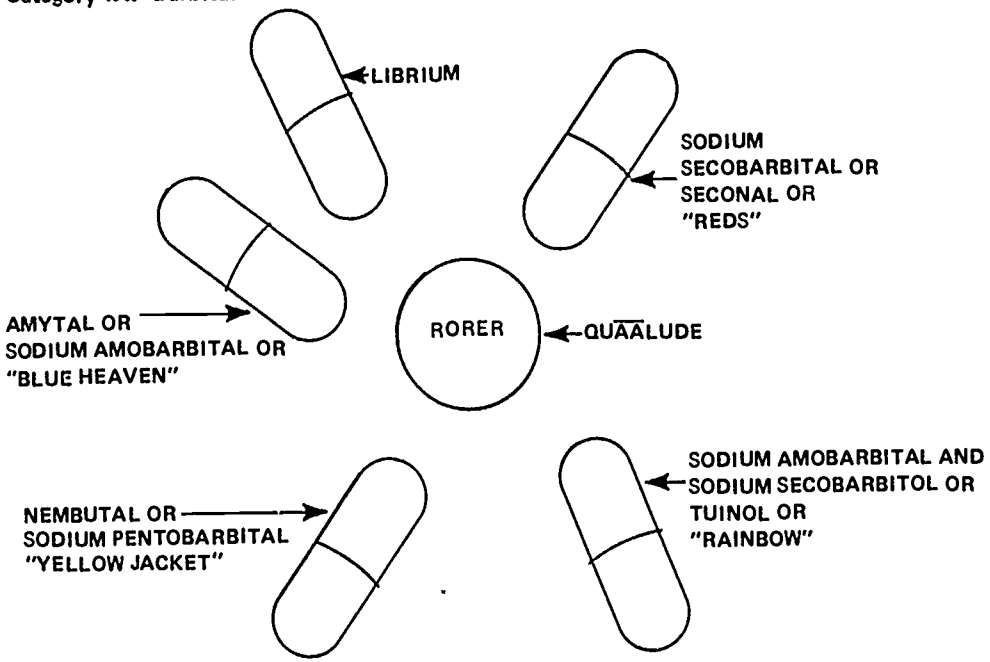

Category X: *Inhalants.*[13] In the first photograph the subject is seated with a plastic bag resting on one knee. The subject is removing the cap from a tube of airplane cement. The second photograph is a close-up of a can of paint thinner, an aerosol can of hair spray, and a tube of airplane cement which is resting upon a crumpled plastic bag. In each case the brand name has been covered by strips of masking tape.

[13] Note that the glue and heroin photographs are carefully posed so as not to be construed as "instructional."

Category XI: *Heroin.*[14] In the first p
balloons of varying colors are arranged
rolled like a used tube of toothpaste; th
and it is turned inside out. A powder re
the table next to a nearly folded "env
and secured with a paper clip. The se
makeshift set of "works" and a tourniqu

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ic bag resting on one knee. The subject is
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e-up of a can of paint thinner, an aerosol can
tube of airplane cement which is resting upon
bag. In each case the brand name has been
masking tape.

nd heroin photographs are carefully posed so as not to be
"

Category XI: *Heroin.*[14] In the first photograph several deflated balloons of varying colors are arranged on a table. One balloon is rolled like a used tube of toothpaste; the end of another is knotted and it is turned inside out. A powder resembling heroin is lying on the table next to a nearly folded "envelope" made of newsprint and secured with a paper clip. The second photograph shows a makeshift set of "works" and a tourniquet.

7 Pennsylvania State University Evaluation Scales

by

John D. Swisher and John J. Horan

GENERAL ADMINISTRATION INSTRUCTIONS[14]

The Pennsylvania State University Evaluation Scales included this chapter have been employed in a variety of descriptiv correlational, and experimental studies. Each scale described in t following sections is usually administered with a series of oth scales and numbered accordingly. (Some programs, depending their objectives for example, may require administration of t Drug Knowledge Scale along with a self-concept measure and/ the Drug Attitude Scale.) Whenever a series of scales is used, it generally recommended that the knowledge scale be one of t first administered. This procedure allows students an opportuni to warm up without immediately feeling that they are being ask personal questions. An overriding asset of these scales is the sho time needed for completion. For planning purposes, one minu should be allowed for each knowledge item and 30 seconds f each attitude item.

Costs

Each of the scales can be duplicated and hand scored b teachers. Consequently, the cost can be absorbed in existi budget structures. Conversely, with appropriate instructio students can fill out answer sheets for machine scoring. Costs he will depend on services available, but a simple reporting of tot scores ought to be less than 10¢ per subject per test used.

Answer sheets will cost approximately 2¢ per subject; duplic tion of the scales about 5¢ per subject per test (first time on cost). Total costs for use of these data should not exceed 20¢ p subject per test.

Target Audiences

These instruments have been tested on junior high, high scho and college-aged audiences. They can and should, however, b considered for use with other age groups (both younger an older). For example, by modifying questions and conducting a item analysis of responses, instruments for other audiences can b

[14] Information in this section applies to each scale included in this chapter.

developed. Drug evaluation instruments may specify particular audiences; they can usually be adjusted for use in testing different age groups (see Introduction to Section Two).

Sample Attachments

A sample face sheet as well as a form used for collection of personal data have been provided. For sistency, directions on the sample not be changed. Choice of personal item depending on the scope and purpose of and personal data questionnaire are appro any of the instruments in this chapter.

(FACE SHEET)

THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALE HIGH SCHOOL FORM

Directions: Please indicate on a separate answer sheet the number that most accurately answers question, or is typical of your opinion. It is not expected that you will know all the answers, but since there is no penalty for guessing please attempt to answer everythi Do not put your name on the answer sheet. By making these questionnaires anonym is our hope that you will answer these questions honestly.

PERSONAL DATA QUESTIONNAIRE

1. Are you male or female?

   a. male
   b. female

2. What is your present educational level?

   a. freshman
   b. sophomore
   c. junior
   d. senior

3. What is your school program?

   a. Vocational-Technical
   b. Commercial
   c. College Preparatory
   d. General

4. What is your overall grade average?

   a. A (3.5+)
   b. B (3.0-3.49)
   c. C (2.0-2.99)
   d. D (1.0-1.99)
   e. E (.9-or lower)

5. Number of schoo participate?

   a. none
   b. one
   c. two

luation instruments may specify particular usually be adjusted for use in testing different duction to Section Two).

et as well as a form used for collection of personal data have been provided. For purposes of test consistency, directions on the sample cover sheet should not be changed. Choice of personal items may vary, however, depending on the scope and purpose of analysis. The face sheet and personal data questionnaire are appropriate for attachment to any of the instruments in this chapter.

(FACE SHEET)

THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALES
HIGH SCHOOL FORM

ctions: Please indicate on a separate answer sheet the number that most accurately answers the question, or is typical of your opinion. It is not expected that you will know all the answers, but since there is no penalty for guessing please attempt to answer everything. Do not put your name on the answer sheet. By making these questionnaires anonymous it is our hope that you will answer these questions honestly.

PERSONAL DATA QUESTIONNAIRE

emale?

nt educational level?

3. What is your school program?

   a. Vocational-Technical
   b. Commercial
   c. College Preparatory
   d. General

4. What is your overall grade average?

   a. A (3.5+)
   b. B (3.0-3.49)
   c. C (2.0-2.99)
   d. D (1.0-1.99)
   e. E (.9-or lower)

5. Number of school activities in which you participate?

   a. none
   b. one
   c. two
   d. three
   e. four or more

PART ONE
DRUG KNOWLEDGE SCALE

INSTRUMENT DESCRIPTION

The Drug Knowledge Scale can be used to measure achievement of the first objective discussed in Chapter 1, (i.e., to increase knowledge about drugs). Previous utilization of this scale in various studies has proven, for example, that users are generally more knowledgeable about drugs than non-users and that increased drug knowledge is directly related to liberal attitudes. All of which suggests that drug education programs focusing on knowledge gain alone may actually be counter-productive. As a subtest, when combined with other reliable attitude and behavior scales, the Drug Knowledge Scale has served as an outcome measure in several experimental drug education programs. Based on separate item analyses, the Knowledge Scale has undergone at least four revisions. As can be seen in the sample instrument which follows, the current form comprises 41 multiple choice items focusing on five types of commonly used drugs: marijuana, hallucinogens, stimulants, depressants and opiates.

ADMINISTRATION AND SCORING

As described in the General Administration Instructions, the Drug Knowledge Scale is usually given first in a series of other scales. It is important to note that many of the knowledge items are very difficult. Therefore, students should be told that they are not expected to know the answers to all of the questions. This is particularly important in a pretest situation where very low scores are typical. Modification may be needed to reflect different levels of student sophistication and/or reading levels. It is also inappropriate to use this scale as a basis for determining grades in any class.

The starred responses (see sample instrument) are the correct answers. The total of correct responses is the score used for evaluation purposes.

THE PENNSYLVANIA STATE
DRUG EDUCATION EVALUA

Part One: Drug Knowled

Developed by John D. Swisher a

1 Which of the following is not a name for mar

a. cannabis
b. grass
c. joint
*d. pan
e. reefer

2. LSD can be detected by:

a. its smell
b. its taste
c. its color
d. its size
*e. none o

3. Amphetamines are:

*a. stimulants
b. depressants
c. physica
d. narcoti

4. Which of the following is not a tranquilizer:

a. thorazine
b. compazine
*c. methed
d. stelazin

5. Codeine is used medically to.

a help people relax
*b. help relieve pain
c. help pe
d. help pe

[15] Reliability and validity located in Part One

Editors' Note: Although this scale is included in it open to interpretation (see items 6, 7 and 31).

PART ONE
DRUG KNOWLEDGE SCALE

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THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALE

Part One: Drug Knowledge Scale[15]

Developed by John D. Swisher and John J. Horan

1. Which of the following is not a name for marijuana:

   a. cannabis
   b. grass
   c. joint
   *d. pan
   e. reefer

2. LSD can be detected by:

   a. its smell
   b. its taste
   c. its color
   d. its size
   *e. none of the above

3. Amphetamines are:

   *a. stimulants
   b. depressants
   c. physically addicting
   d. narcotics

4. Which of the following is not a tranquilizer:

   a. thorazine
   b. compazine
   *c. methedrine
   d. stelazine

5. Codeine is used medically to:

   a. help people relax
   *b. help relieve pain
   c. help people sleep
   d. help people become alert

[15] Reliability and validity located in Part One of this chapter's Appendix. *Editors' Note:* Although this scale is included in its entirety, several items are open to interpretation (see items 6, 7 and 31).

6. A person who uses marijuana a lot may:

a. become addicted
b. use more in order to feel the effects
*c. think he can't get along without it
d. try heroin

7. Some research with white blood cells tends to indicate that LSD:

a. dissolves chromosomes
b. destroys vision
*c. causes chromosomal mutations
d. causes chromosomes to break

8. Which of the following is not a stimulant:

a. benzedrine
b. methedrine
*c. resperpine
d. amphetamine

9. The term "speed" refers to

a. barbiturates
*b. amphetamines
c. marijuana
d. LSD
e. narcotics

10. A drug user who increased the amount of a drug in order to obtain the same effect is developing a(n):

a. physical dependency
*b. tolerance
c. addiction
d. psychological dependency

11. Hashish is a(n):

a. concentrated form of opium
b. amphetamine
*c. concentrated form of marijuana
d. physically addicting drug

12. LSD is sometimes referred to as:

a. pot
*b. cube
c. speed
d. zap

13. Amphetamines are sometimes called:

a. red-devils
b. goof-balls
c. yellow
*d. pep p

14. Barbiturates are sometimes called:

a. pep-pills
*b. goof-balls
c. truck
d. hard s

15. Marijuana grows in the climate of:

a. Africa
b. South America
c. Northeastern United States
*d. all of the above

16. Peyote is a(n):

a. mushroom
*b. small cactus
c. root
d. herb

17. Extensive use of barbiturates may cause:

a. needing more to feel the effects
b. a feeling that you can't get along withou
c. physical addition
*d. all of the above

18. The effects of a drug on a person are a result

a. previous experience with the drug
b. the amount of drug taken
c. the person's unique personality
*d. all of the above

19. Which of the following is non-addicting:

a. codeine
b. barbiturates
*c. mariju
d. heroin

rijuana a lot may:

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along without it

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d. amphetamine

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c. addiction
d. psychological dependency

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d. zap

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c. yellow-jackets
*d. pep pills

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*b. goof-balls
c. truck drivers
d. hard stuff

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16. Peyote is a(n):

a. mushroom
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*d. all of the above

18. The effects of a drug on a person are a result of:

a. previous experience with the drug
b. the amount of drug taken
c. the person's unique personality
*d. all of the above

19. Which of the following is non-addicting:

a. codeine
b. barbiturates
*c. marijuana
d. heroin

20. Benzedrine and dexedrine are:

a. depressants
*b. amphetamines
c. narcotics
d. barbiturates

21. Barbiturates are:

a. stimulants
*b. depressants
c. non-addicting
d. available without prescription

22. The fastest way to feel the effects of marijuana is by:

*a. smoking it in a cigarette
b. inhalation of fumes
c. eating it in a capsule
d. injecting it in a blood vessel

23. LSD can cause:

a. blindness
b. deafness
*c. hallucinations
d. all of the above

24. Which of the following has the least potential for psychological dependence:

*a. cannabis
b. dexedrine
c. doriden
d. alcohol

25. Which of the following is *not* a long-term effect of narcotic use:

a. loss of appetite and weight
b. impotence
*c. sterility
d. high blood pressure

26. Which is the most powerful of the hallucinogens:

a. peyote
b. marijuana
*c. LSD
d. mescaline

27. Continual use of amphetamines can lead

a. physical dependence
b. tolerance
*c. psychological dependence
d. all of the above are possible outcome

28. Which of the following drugs has the high from physical dependence?

a. heroin
b. amphetamines
*c. ba
d. co

29. Demerol is a(n):

*a. artificial narcotic
b. stimulant for low blood pressure
c. mild tranquilizer
d. ingredient in many cough medicines

30. One effect that marijuana does *not* result

*a. decreased appetite
b. feeling of elation
c. change of perception
d. impairment of judgment and coordina

31. Use of LSD does *not* result in:

a. a psychotic episode
b. "flashbacks"
*c. increased intelligence
d. severe anxiety reactions

32. Which of the following would be most barbiturates are in one's system:

a. marijuana
b. amphetamines
*c. alco
d. LSD

33. Tincture of opium is medically used for:

*a. stomach upset
b. depressed persons
c. incr
d. it is

xedrine are:

c. narcotics
d. barbiturates

out prescription

o feel the effects of marijuana is by:

a cigarette
fumes
capsule
a blood vessel

*c. hallucinations
d. all of the above

following has the least potential for psychological

c. doriden
d. alcohol

wing is *not* a long-term effect of narcotic use:

te and weight

essure

powerful of the hallucinogens:

*c. LSD
d. mescaline

27. Continual use of amphetamines can lead to:

a. physical dependence
b. tolerance
*c. psychological dependence
d. all of the above are possible outcomes of continual use

28. Which of the following drugs has the highest death rate upon withdrawal from physical dependence?

a. heroin
b. amphetamines
*c. barbiturates
d. cocaine

29. Demerol is a(n):

*a. artificial narcotic
b. stimulant for low blood pressure
c. mild tranquilizer
d. ingredient in many cough medicines

30. One effect that marijuana does *not* result in:

*a. decreased appetite
b. feeling of elation
c. change of perception
d. impairment of judgment and coordination

31. Use of LSD does *not* result in:

a. a psychotic episode
b. "flashbacks"
*c. increased intelligence
d. severe anxiety reactions

32. Which of the following would be most dangerous to consume while barbiturates are in one's system:

a. marijuana
b. amphetamines
*c. alcohol
d. LSD

33. Tincture of opium is medically used for:

*a. stomach upset
b. depressed persons
c. increasing activity level
d. it is never used medically

34. The effects of marijuana are most similar to.

a. heroin
b. amphetamines
c. morphine
*d. LSD

35. Which of the following is not considered to be an hallucinogen:

a. marijuana
b. LSD
c. DMT
*d. SDC

36. Which of the following is least likely to cause death upon use or an overdose:

a. heroin
b. barbiturates
*c. amphetamines
d. morphine

37. Under the Federal law barbiturates are classified as follows:

*a. high potential for abuse, some medical use
b. high potential for abuse, no medical use
c. dangerous drug
d. narcotic

38. Which of the following does not produce physica

a. morphine
*b. cocaine
c. codeine
d. heroin

39. Heroin is typically:

a. smoked
b. eaten
*c. injected i
d. injected i

40. Marijuana is legally classified by the federal gov way:

a. high potential for abuse, some medical use
*b. high potential for abuse, no medical use
c. hallucinogen
d. narcotic

41. Medically speaking LSD is called an hallucinog is referred to as follows:

a. high potential for abuse, no medical use
b. opiate
*c. high potential for abuse, some medical use
d. depressant

PART TWO
DRUG ATTITUDE SCALE[16]

INSTRUMENT DESCRIPTION

This scale is designed to determine the impact of drug education on the attitudes of individuals or group members. It can be used to measure achievement of the second objective discussed in Chapter 1. The Drug Attitude Scale consists of 14 Likert-type items in an alternating positive and negative order (see sample instrument). Subjects respond by indicating the extent to which they agree or disagree with each statement. Although t short, reliability and validity are more than ac of Appendix).

The Drug Attitude Scale is appropriate subtest in the series of Drug Education Evalu

ADMINISTRATION AND SC

Odd numbered items are scored as follow and e=1. Even numbered items are scored c=3, d=4 and e=5. The scale yields a single s to 70. Higher scores represent conservative lower scores represent liberal (pro-drug) attitu

[16] *Editors' Note:* This scale should be evaluated prior to its use regarding the social desirability factor, i.e., there is a tendency for people to respond to test items in ways that they feel are more socially desirable than an honest response would be. Also this is a forced choice scale, thus does not allow for qualified opinion responses to questions concerning complex issues.

are most similar to:

c. morphine
*d. LSD

s not considered to be an hallucinogen:

c. DMT
*d. SDC

is least likely to cause death upon use or an

*c. amphetamines
d. morphine

arbiturates are classified as follows:

buse, some medical use
buse, no medical use

38. Which of the following does not produce physical dependency:

a. morphine
*b. cocaine
c. codeine
d. heroin

39. Heroin is typically:

a. smoked
b. eaten
*c. injected into a vein
d. injected into an artery

40. Marijuana is legally classified by the federal government in the following way:

a. high potential for abuse, some medical use
*b. high potential for abuse, no medical use
c. hallucinogen
d. narcotic

41. Medically speaking LSD is called an hallucinogen but legally speaking it is referred to as follows:

a. high potential for abuse, no medical use
b. opiate
*c. high potential for abuse, some medical use
d. depressant

PART TWO
DRUG ATTITUDE SCALE[16]

UMENT DESCRIPTION

o determine the impact of drug education duals or group members. It can be used to the second objective discussed in Chapter ale consists of 14 Likert-type items in an negative order (see sample instrument). icating the extent to which they agree or disagree with each statement. Although the scale is relatively short, reliability and validity are more than adequate (see Part Two of Appendix).

The Drug Attitude Scale is appropriately administered as a subtest in the series of Drug Education Evaluation Scales.

e should be evaluated prior to its use regarding the there is a tendency for people to respond to test items in cially desirable than an honest response would be. Also, hus does not allow for qualified opinion responses to ues.

ADMINISTRATION AND SCORING

Odd numbered items are scored as follows: a=5, b=4, c=3, d=2 and e=1. Even numbered items are scored as follows: a=1, b=2, c=3, d=4 and e=5. The scale yields a single score ranging from 14 to 70. Higher scores represent conservative (anti-drug) attitudes; lower scores represent liberal (pro-drug) attitudes.

THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCA

Part Two: Drug Attitude Scale[17]

Developed by John J. Horan and John D. Swisher

1. Drugs are basically an "unnatural" way to enjoy life.

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly disagree

2. I see nothing wrong with taking an LSD trip.

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly disagree

3. I'd have to be pretty sick before I'd take any drug including an aspirin.

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly disagree

4. Teachers ought to encourage their students to experiment with drugs.

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly disagree

5. Pep pills are a stupid way of keeping alert when there's important work to be done.

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly disagree

6. I wish I could get a hold of some pills to calm me down whenever I get "up tight."

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly disagree

[17] Reliability and validity data located in Part Two of this chapter's Appendix.

7. Students should be told about the harmful

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly

8. All drugs should be made legal and freely ava

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly

9. Even if my best friend gave me some hash, I

   a. strongly agree
   b. agree
   c. have no opinion
   d. disagree
   e. strongly

10. In spite of what the establishment says, the it's at."

    a. strongly agree
    b. agree
    c. have no opinion
    d. disagree
    e. strongly

11. As a general rule of thumb, most drugs are d only with medical authorization.

    a. strongly agree
    b. agree
    c. have no opinion
    d. disagree
    e. strongly

12. I admire people who like to get stoned.

    a. strongly agree
    b. agree
    c. have no opinion
    d. disagree
    e. strongly

THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALE

Part Two: Drug Attitude Scale[17]

Developed by John J. Horan and John D. Swisher

"unnatural" way to enjoy life.

d. disagree
e. strongly disagree

ith taking an LSD trip.

d. disagree
e. strongly disagree

ick before I'd take any drug including an aspirin.

d. disagree
e. strongly disagree

ourage their students to experiment with drugs.

d. disagree
e. strongly disagree

way of keeping alert when there's important work

d. disagree
e. strongly disagree

hold of some pills to calm me down whenever I

d. disagree
e. strongly disagree

data located in Part Two of this chapter's Appendix.

7. Students should be told about the harmful side effects of certain drugs.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

8. All drugs should be made legal and freely available.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

9. Even if my best friend gave me some hash, I probably wouldn't use it.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

10. In spite of what the establishment says, the drug scene is really "where it's at."

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

11. As a general rule of thumb, most drugs are dangerous and should be used only with medical authorization.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

12. I admire people who like to get stoned.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

13. Taking any kind of dope is a pretty dumb idea.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

14. I would welcome the opportunity to get high

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly

PART THREE
DRUG USE SCALES

INSTRUMENT DESCRIPTIONS

This section includes two instruments for use in measuring drug use. First, The Drug Use Inventory (see Table 1) is a scale which assesses use behavior and identifies possible use-related factors. The Inventory can be used to determine the behavioral impact of drug education programs seeking to affect drug use behavior. The Inventory is concise, yet relatively comprehensive. The second instrument is a scale to measure personal drug use (see Table 2). The two scales can be administered separately or together.

Keep in mind that these sample measures are only two of many other scales available. For a broader array of potential use measures, the reader is referred to the 1972 edition of *Extent of Illicit Drug Use: A Compilation of Studies, Surveys and Polls* by Dorothy Berg. When examining other drug use measures, it is important to consider the following, often overlooked, factors:

- The extent of current use of various products
- Motives, sources, and other epidemiological variables
- Developmental factors (e.g., age at first use)
- The relationship between peer and personal use
- The relationship between drug use and other health habits (e.g., smoking and drinking)
- Variations based on geographic variables

Few existing use measures have attempted to assess these variables. Additionally, few past studies of use and incidence have been standardized or have followed standard data collection procedures. More reliable research activity is needed. It is hoped the utilization of the instruments in this further testing and exploration.

DRUG USE INVENTORY (T

Administration and Scoring

This inventory is typically contained administered to a group. The directions a examiner input is required, except per occasional question regarding format, e numbered from top to bottom.

To insure validity, the inventory sh anonymously. Since the content of the q incriminating, respondents must feel that only confidential but also untraceable. T little difficulty in survey or correlationa inventory is administered on a once-only projects where longitudinal pre-post da required, a more sophisticated data c needed. One recommended system for data retrieval is described in Chapter 6.

As with the Personal Drug Use Scale, the of the numbers checked. Odd numbere follows: a=5, b=4, c=3, d=2, e=1. Even nur as follows: a=1, b=2, c=3, d=4, e=5.

---

[1] Correlational Research described in Part Three of t

e is a pretty dumb idea.

d. disagree
e. strongly disagree

14. I would welcome the opportunity to get high on drugs.

a. strongly agree
b. agree
c. have no opinion
d. disagree
e. strongly disagree

PART THREE
DRUG USE SCALES

UMENT DESCRIPTIONS

two instruments for use in measuring drug
e Inventory (see Table 1) is a scale which
nd identifies possible use-related factors.
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measure personal drug use (see Table 2).
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between peer and personal use
between drug use and other health habits
nd drinking)
d on geographic variables

measures have attempted to assess these
few past studies of use and incidence have
have followed standard data collection
ble research activity is needed. It is hoped the utilization of the instruments in this handbook will catalyze further testing and exploration.

DRUG USE INVENTORY (Table 1)[18]

Administration and Scoring

This inventory is typically contained in a battery of tests administered to a group. The directions are self-explanatory; no examiner input is required, except perhaps to clear up an occasional question regarding format, e.g., the questions are numbered from top to bottom.

To insure validity, the inventory should be administered anonymously. Since the content of the questions may be highly incriminating, respondents must feel that their answers are not only confidential but also untraceable. This requirement poses little difficulty in survey or correlational studies, wherein the inventory is administered on a once-only basis. In experimental projects where longitudinal pre-post data on each subject is required, a more sophisticated data collection procedure is needed. One recommended system for assuring anonymity in data retrieval is described in Chapter 6.

As with the Personal Drug Use Scale, the use score equals a total of the numbers checked. Odd numbered items are scored as follows: a=5, b=4, c=3, d=2, e=1. Even numbered items are scored as follows: a=1, b=2, c=3, d=4, e=5.

---

[18] Correlational Research described in Part Three of this chapter's Appendix.

TABLE 1
THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALE
Part Three: Drug Use Inventory

DIRECTIONS: Answer only the questions that apply to you with the products listed across the top of this questionnaire. Put the letter which most accurately describes you on the separate answer sheet. It is possible that you may answer only the first two questions for some products, but you may answer all of the questions for other products.

	Cigarettes	Alcohol Beer, Wine Mixed Drinks	Marijuana	Hallucinogens LSD Mescaline Peyote	Stimulants Amphetamines Speed (without a prescription)	Depressants Tranquilizers Barbiturates (without a prescription)
To what extent do your best friends use this product? a. not at all b. monthly c. weekly d. daily e. more than once a day	1	7	13	19	25	31
Have you ever used this product? a. no b. yes	2	8	14	20	26	32
If you checked "no" do not answer any more questions for this product, OTHERWISE CONTINUE.						
How old were you when you first used this product? a. under 12 b. 12-15 c. 16-18 d. 19-21 e. over 21	3	9	15	21	27	33
To what extent are you currently using this product? a. not at all b. monthly c. weekly d. daily e. more than once a day	4	10	16	22	28	34
If you checked "not at all" do not answer any more questions for this product, OTHERWISE CONTINUE.						
What is your primary source for obtaining this product? a. friends (students) b. friends (non-students) c. other contacts d. family members e. a store	5	11	17	23	29	35
Which of the following is your primary reason for using this product? a. curiosity b. pleasure, fun or kicks c. to be sociable d. to gain insight or creativity e. to escape pressure f. to help study g. other	6	12	18	24	30	36

PERSONAL DRUG USE SCALE (Table 2)

Utilization of the instrument presented in Table 2 allows the identification of the following variables:

- Non-users of various drugs
- Prior users of various drugs
- Experimenters with various drugs
- Users of various drugs as well as the extent of their current use

This scale also reduces the number of questions to a minimum. It is particularly easy for the non-user; he does not have to read irrelevant items or responses. The scale can be scored so as to differentiate among drugs (see scoring information below). Finally, there is an item which can be used to determine the truthfulness of responses (the fictitious drug "c item 8).

Administration and Scoring

This scale should be given anonymously The examiner should be someone the studen 5, "Pitfalls of Data Collection"). Assuranc always necessary when measuring drug use b ity is an extremely important issue since se only practical means of determining both t use and individual drug behavior.

A use score is the total of the numb respondent. (Same scoring procedure as Table remember that a score of six equals total a can be used to differentiate between drugs.

TABLE 2

THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCAL

Part Three: Personal Drug Use Scale

DIRECTIONS: On the right you will find a list of products. Some people have not had any contact with these products whatsoeve considerable contact with each product. Use the following code to describe the frequency of your contacts with these products.

A. I have *never used* this product.
B. I have used this product *BEFORE , 1973* but do not use it now.*
C. I have used this product *SINCE , 1973* but do not use it now.*
D. I use this product about *once or twice a year.*
E. I use this product about *once or twice a month.*
F. I use this product about *once or twice a week.*
G. I use this product about *once or twice a day.*
H. I use this product *often each day.*

Circle only one choice for each question.

* Insert appropriate date (month and day).

DRUG USE SCALE (Table 2)

trument presented in Table 2 allows the
owing variables:

ous drugs

ious drugs

ith various drugs

drugs as well as the extent of their current

s the number of questions to a minimum.
or the non-user; he does not have to read
onses. The scale can be scored so as to
ugs (see scoring information below). Fin-
which can be used to determine the truthfulness of responses (the fictitious drug "curare" mentioned in item 8).

Administration and Scoring

This scale should be given anonymously and in small groups. The examiner should be someone the students trust (see Chapter 5, "Pitfalls of Data Collection"). Assurances of anonymity are always necessary when measuring drug use behavior. Confidentiality is an extremely important issue since self-report remains the only practical means of determining both the incidence of drug use and individual drug behavior.

A use score is the total of the numbers checked by the respondent. (Same scoring procedure as Table 1). It is important to remember that a score of six equals total abstinence. Multipliers can be used to differentiate between drugs.

TABLE 2

E PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALE

Part Three: Personal Drug Use Scale

---

ht you will find a list of products. Some people have not had any contact with these products whatsoever. Other people have had
ach product. Use the following code to describe the frequency of your contacts with these products.

this product.
roduct *BEFORE* , 1973* *but do not use it now.*
roduct *SINCE* , 1973* *but do not use it now.*
about *once or twice a year.*
about *once or twice a month.*
about *once or twice a week.*
about *once or twice a day.*
often each day.

each question.

---

th and day).

	never used	used before	used since	once or twice per year	once or twice per month
1. Cigarettes	A	B	C	D	E
2. Alcohol (beer, wine, mixed drinks)	A	B	C	D	E
3. Marijuana (pot, grass)	A	B	C	D	E
4. Hashish (hash)	A	B	C	D	E
5. Hallucinogens (LSD, mescaline, peyote)	A	B	C	D	E
6. Stimulants without prescriptions (pep pills, uppers, speed)	A	B	C	D	E
7. Depressants without prescriptions	A	B	C	D	E
8. Curare (coolies)	A	B	C	D	F
9. Heroin or other opiates (H, horse, smack)	A	B	C	D	E
10. Cocaine (snow, dust)	A	B	C	D	E
11. Any other similar products without prescription? If so, what:	A	B	C	D	E

PART FOUR
LAW AND SOCIETY SCALE[19]

INSTRUMENT DESCRIPTION

This section describes a minimally reliable scale intended to measure an individual's attitudes toward law in general. Some of the items refer to drug laws, yet the scale items as a whole are written to reflect a basic understanding of law (see sample instrument). The scale consists of 14 Likert-type items in an alternating negative and positive order. Keep in mind that this scale has been used in only one experimental drug education program.

To some extent, this scale is a measure of alienation from the law which, if present, gives the individual a rationalization for engaging in a variety of illicit
believe that drug educators shou
what laws mean in terms of social no
how they can be changed and how
instead of saying simplistically "don't
illegal."

SCORING

The scale yields a single score rangin
scores represent an acceptance and
whereas, lower scores represent a re
unwillingness to obey laws. This scale is
other scales. Scores are summated as a si
items are scored as follows: a=5, b=
numbered items are scored as follows: a=

[19] *Editors' Note*: This is a forced choice scale, thus does not allow for qualified opinion responses to questions concerning complex issues. Items related to complex issues work well with respondents having limited knowledge, however, those having more knowledge and sophistication may have difficulty selecting an either/or response.

	never used	used before	used since	once or twice per year	once or twice per month	once or twice per week	once or twice per day	often each day
	A	B	C	D	E	F	G	H
e, mixed drinks)	A	B	C	D	E	F	G	H
ss)	A	B	C	D	E	F	G	H
	A	B	C	D	E	F	G	H
D, mescaline, peyote)	A	B	C	D	E	F	G	H
t prescriptions (pep pills, uppers, speed)	A	B	C	D	E	F	G	H
ut prescriptions	A	B	C	D	E	F	G	H
	A	B	C	D	E	F	G	H
piates (H, horse, smack)	A	B	C	D	E	F	G	H
ust)	A	B	C	D	E	F	G	H
products without prescription?	A	B	C	D	E	F	G	H

PART FOUR
LAW AND SOCIETY SCALE[19]

NSTRUMENT DESCRIPTION

cribes a minimally reliable scale intended to vidual's attitudes toward law in general. s refer to drug laws, yet the scale items as a to reflect a basic understanding of law (see). The scale consists of 14 Likert-type items in tive and positive order. Keep in mind that this ed in only one experimental drug education

, this scale is a measure of alienation from the ent, gives the individual a rationalization for engaging in a variety of illicit behaviors. The authors believe that drug educators should consider explaining what laws mean in terms of social norms, how laws are made, how they can be changed and how they affect individuals, instead of saying simplistically "don't use drug because they are illegal."

s is a forced choice scale, thus does not allow for qualified estions concerning complex issues. Items related to complex ondents having limited knowledge, however, those having more tion may have difficulty selecting an either/or response.

SCORING

The scale yields a single score ranging from 14 to 70. Higher scores represent an acceptance and understanding of laws, whereas, lower scores represent a rejection of laws and an unwillingness to obey laws. This scale is usually given along with other scales. Scores are summated as a single score. Odd numbered items are scored as follows: a=5, b=4, c=3, d=2, e=1. Even numbered items are scored as follows: a=1, b=2, c=3, d=4, e=5.

THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALES
Part Four: Law and Society Scale[20]

Developed by John D. Swisher and Anthony J. Piniuk

1. I feel that as individuals we must obey all laws not just those that we agree with.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat disagree
   e. strongly disagree

2. Laws which restrict personal liberties like the drug laws are just as bad as laws against religious freedom.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat disagree
   e. strongly disagree

3. Society is a better place because of laws.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat disagree
   e. strongly disagree

4. The People really do not have a say in making the laws.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat disagree
   e. strongly disagree

5. Laws protect the little people from getting stepped on.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat disagree
   e. strongly disagree

6. I feel it is okay for me to break those laws which

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat
   e. strongly d

7. Laws are made by the majority of the people.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat
   e. strongly d

8. Laws are made without considering what most p

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat
   e. strongly d

9. Laws are like the rules of a game: they allow u cooperatively.

   a. strongly agree
   b. somewhat agree
   c. have no opinion
   d. somewhat
   e. strongly d

10. If you can break the law and get away with it I w

    a. strongly agree
    b. somewhat agree
    c. have no opinion
    d. somewhat
    e. strongly d

11. Without laws most people would suffer.

    a. strongly agree
    b. somewhat agree
    c. have no opinion
    d. somewhat
    e. strongly di

[20] Reliability and validity data located in Part Four of the Appendix.

HE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALES

Part Four: Law and Society Scale[20]

Developed by John D. Swisher and Anthony J. Piniuk

ls we must obey all laws not just those that we

d. somewhat disagree
e. strongly disagree

sonal liberties like the drug laws are just as bad as edom.

d. somewhat disagree
e. strongly disagree

because of laws.

d. somewhat disagree
e. strongly disagree

t have a say in making the laws.

d. somewhat disagree
e. strongly disagree

people from getting stepped on.

d. somewhat disagree
e. strongly disagree

ta located in Part Four of the Appendix.

6. I feel it is okay for me to break those laws which I feel are wrong.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

7. Laws are made by the majority of the people.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

8. Laws are made without considering what most people want and need.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

9. Laws are like the rules of a game: they allow us to work, live and play cooperatively.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

10. If you can break the law and get away with it I would say do it.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

11. Without laws most people would suffer.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

12. Laws are made to limit everyone's freedom.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

13. Laws are made to guarantee individuals certain rights.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagee
e. strongly disagree

14. Laws which need to be changed should be disobeyed until they are changed.

a. strongly agree
b. somewhat agree
c. have no opinion
d. somewhat disagree
e. strongly disagree

APPENDIX

RELIABILITY, VALIDITY AND CORRELATIONS[21]

Part One: Drug Knowledge Scale

Content validity was insured by including approximately the same number of items from each category of drug. Construct and criterion-related validity are suggested by higher scores in user than in non-user groups (p. 1.01) and by a slight but significant correlation (r=.26, p 1.05) between test scores and grade-point average. Internal consistency reliability coefficients on the instrument have exceeded .80.

[21] The authors may be contacted for more complete information. Address inquiries to Dr. John D. Swisher, Addictions Prevention Laboratory, Department of Counselor Education, The Pennsylvania State University, University Park, Pennsylvania 16802.

Any user of this scale is advised to mak
items which might increase the instrum
population and program being evaluat
however, could greatly affect the scale's
necessitating a new validity and reliability

Part Two: Drug Attitude Scale

Alpha (internal consistency) reliability
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120 ninth grade students. Criterion relate
by Hoffman (1972) who noted that co
instrument and self-reported, weighted
from .64 to .70. He further observed that
users displayed significant attitudinal d
though the scale is relatively short, reliabili
than adequate.

Part Three: Drug Use Inventory

Correlations involving the Drug Use
some interesting results. For example, Wa
found that the relationship between peer a
was quite high (.64 for marijuana use),
between personal use of drugs and feeling
to popular opinion, was .0 regardless of dru

Part Four: Law and Society Scale

Alpha (internal consistency) reliability
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respectively. The total score on this scale
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There is a positive correlation between
prediction of drug use. On a group of co
correlation of .53 was found between scor
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d. somewhat disagree
e. strongly disagree

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APPENDIX

, VALIDITY AND CORRELATIONS[2 1]

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Any user of this scale is advised to make minor adjustments in items which might increase the instrument's relevancy to the population and program being evaluated. Extensive editing, however, could greatly affect the scale's validity and reliability, necessitating a new validity and reliability check.

Part Two: Drug Attitude Scale

Alpha (internal consistency) reliability coefficients were calculated at .84 and .87 on two separate administrations to a sample of 120 ninth grade students. Criterion related validity was gathered by Hoffman (1972) who noted that correlations between this instrument and self-reported, weighted drug use scores ranged from .64 to .70. He further observed that various classes of drug users displayed significant attitudinal differences. Thus, even though the scale is relatively short, reliability and validity are more than adequate.

Part Three: Drug Use Inventory

Correlations involving the Drug Use Inventory have yielded some interesting results. For example, Warner and Swisher (1971) found that the relationship between peer and personal use of drugs was quite high (.64 for marijuana use), while the relationship between personal use of drugs and feelings of alienation, contrary to popular opinion, was .0 regardless of drug type.

Part Four: Law and Society Scale

Alpha (internal consistency) reliability coefficients for eighth graders (N=44) and eleventh graders (N=54) were .66 and .76 respectively. The total score on this scale for the above populations correlated between .46 and .54 with willingness to use drugs. There is a positive correlation between the law scale and the prediction of drug use. On a group of college students (N=40) a correlation of .53 was found between scores on the law scale and attitudes toward personal use. These latter data lend further validity to this particular instrument.

8 Affect and Cognition in Drug Education

by

John F. Strandmark

Many educators are acutely sensitive to the multiple problems facing educational communities today. More books on these problems have been written in the last five years than in the twenty-five that preceded them. *Crisis in the Classroom, Pygmalion in the Classroom, Curricular Concerns in a Revolutionary Era, Teaching as a Subversive Activity,* to name only a handful of titles, are earnest attempts to focus on the problems in the classroom and some of their solutions.

One of the most promising of these solutions appears to be the inclusion of an affective component into school curricula. Such programs have the potential of revitalizing our schools through processes which provide more meaningful and personally relevant learning experiences for students.

One of the most significant aspects of such a solution is that it recognizes and values the interaction between the two basic components of every learning experience: cognitive and affective.

Cognition refers to thinking or intellectual functioning. It is, therefore, subject or fact-oriented. In general, our schools have relied primarily on the cognitive component of the educational process over the past several decades. Consequently, less emphasis (or often neglect) has been attached to the second basic component of the learning experience, the *affective* element. Affective learning focuses on the individual learner, considering his feelings and emotions as an important part of learning. The affective element gives personal relevance to the materials being presented. Properly understood it is not to be construed as sensitivity training or T-groups within the schools, nor as an approach which sanctions instilling socially "correct" values and attitudes in students.

Both elements are an integral part of any learning experience. There can be no meaningful intellectual learning without some sort of feeling, just as there are no feelings without the mind being somehow involved. Unfortunately, curriculum outlines, in their effort to compress and categorize subject matter, all too often fail to take this dichotomy into account. By focusing on subject matter only, the outlines create a one-sided view of the world.

Teachers are pressured to cover all the subject matter set forth in the curriculum outline, which allows no time to relate the materials to human experience. Through reliance on organized, subject oriented curriculum outlines as the basic mode of instruction, educators have committed what Paul Tillich has called the fatal pedagogical error–"To throw answers like stones at the heads of those who have not yet asked the question."

The responsibility for making learning personally relevant has been left by default to the students. That this method is perhaps inadvisable can be witnessed by the highly vocal discord and unrest currently coming from students concerning what they express as a lack of relevance and depersonalization of their formal education.

Some educators are now moving to formally merge the cognitive and affective elements into an integrated approach to learning, one which acknowledges the needs of the whole person–emotional as well as intellectual. This merger has been labeled "confluent" or "humanistic" education. Spurred on by a recent spate of books on the philosophical elements and operational aspects of humanistic education, such as *Human Teaching for Human Learning, Values and Teaching, What Do I Do Monday* and *Schools Without Failure,* teachers across the country are experimenting with imaginative teaching techniques in an attempt to help provide more positive learning experiences for students.

NEW HOPE FOR DRUG EDUCATION

The recent trend toward confluent education is particularly welcome in the area of drug education for it is here that the traditional "line 'em up in rows and shoot it at 'em!" approach most noticeably fails. Traditional drug education courses consider drug use as a behavior in and of itself, isolated from other life experiences. Such courses attempt to alter behavior without considering reasons underlying drug use. The objectives of such programs are to stop students from using drugs at any cost. It is for this reason that scare techniques and fact-oriented approaches are trundled out in the hope that students will either be frightened or discouraged from using drugs. Little or no attempt is made in such courses to relate drug use to any other aspect of a student's life. That these approaches have met wi complete success has already been adequ Introduction and Overview).

Confluent education applied to drug ab vehicle through which students and teache and understanding of their attitudes and b towards the definition of rational, well positions towards drug use.

Most confluent drug education progra drugs in a societal context as a coping m This form of drug use is viewed as a emotional or behavioral problems which st inability to meet his needs in ways th destructive to him.

From the literature related to psycho emerged numerous classifications of u Maslow's hierarchy of needs (1962) and ries[22] (1966) are two classification systen the basis for designing different confluent d As the word "hierarchy" implies, Maslow several *levels* of needs. At the base physiological needs followed by safety belongingness needs. Next are self-esteem of the hierarchy contains what Maslo actualizing person. He defines self-actualiz who" . . . use and exploit fully their talen ities, etc. Such people seem to be fulfillin doing the best they are capable of doing" states that before any one can move up on of the lower level must be at least partially

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- Respect

[22] There has been considerable controversy over the values. The book *Values and Teaching* provides c differentiation.

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Confluent education applied to drug abuse prevention can be a vehicle through which students and teachers alike develop insight and understanding of their attitudes and behaviors–the first step towards the definition of rational, well-thought out personal positions towards drug use.

Most confluent drug education programs view the misuse of drugs in a societal context as a coping mechanism or an escape. This form of drug use is viewed as a "symptom" of deeper emotional or behavioral problems which stem from an individual's inability to meet his needs in ways that are not potentially destructive to him.

From the literature related to psychology and sociology has emerged numerous classifications of universal human needs. Maslow's hierarchy of needs (1962) and Lasswell's value categories[22] (1966) are two classification systems which have served as the basis for designing different confluent drug education programs. As the word "hierarchy" implies, Maslow's framework sets forth several *levels* of needs. At the base of the hierarchy are physiological needs followed by safety needs and love and belongingness needs. Next are self-esteem needs and the top level of the hierarchy contains what Maslow has called the self-actualizing person. He defines self-actualizing individuals as those who"... use and exploit fully their talents, capacities, potentialities, etc. Such people seem to be fulfilling themselves and to be doing the best they are capable of doing" (Maslow, 1954). Maslow states that before any one can move up on the hierarchy his needs of the lower level must be at least partially met.

Lasswell approaches the classification from a different perspective. He considers there to be eight universal human needs:

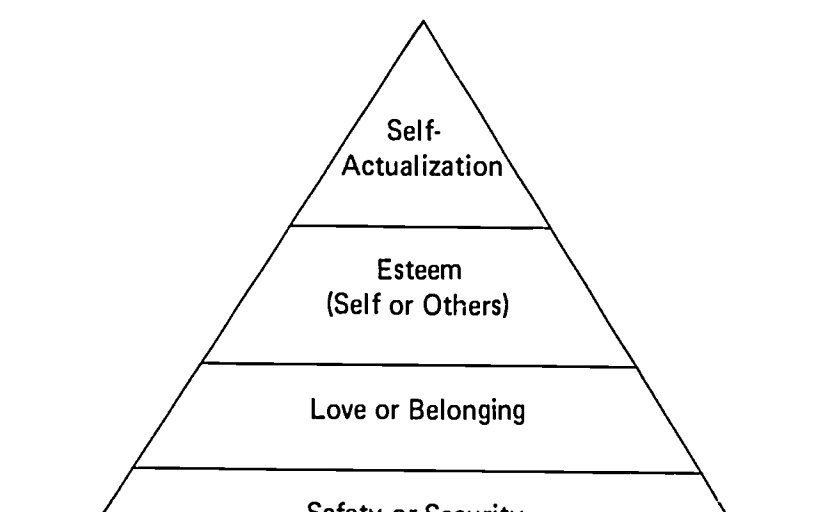
- Affection
- Respect

[22] There has been considerable controversy over the dichotomy between needs and values. The book *Values and Teaching* provides considerable insight into this differentiation.

- Skill
- Enlightenment
- Power (Influence)
- Wealth (meaning goods and services in the school-setting)
- Well-being (both physical and mental)
- Rectitude (Responsibility)

He contends that every person has a need to give full personal expression to each of these needs. Deprivation in any of the categories prevents the individual from achieving his full potential.

Broadly stated, the goal of most confluent drug education programs is to help individuals understand their basic needs and to explore potentially successful ways of meeting those needs *before* becoming physically or emotionally dependent on drugs. Embracing such a goal allows confluent drug education programs to consider a wide range of life experiences and social behavior.



Maslow's Basic Needs Hierarchy

Abuse of drugs often retires to the back
other personal problem areas such as sex
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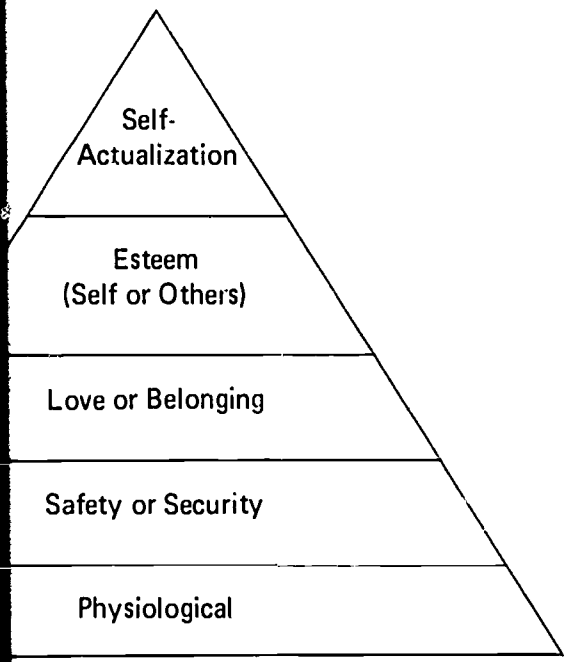

low's Basic Needs Hierarchy

Abuse of drugs often retires to the background as students discuss other personal problem areas such as sex, race relations and family conflict.

If a person is able to find ways to meet his needs in positive, satisfying ways that further develop his potential, he is going to develop a stronger, more resilient self-concept. The assumption is that if a person thinks highly of himself, he will have less reason to escape through the heavy use of drugs, or other destructive behaviors.

So the challenge is presented to provide learning experiences and tools which students can use to help understand and accept themselves, and more fully develop their capabilities.

THREE STRATEGIES FOR CONFLUENT DRUG EDUCATION

Confluent drug education programs employ several basic strategies aimed at answering this challenge. These strategies correspond directly to the Level II objectives listed in Chapter 1. One approach is to allow students the opportunity to explore the *process of valuing* in the classroom. By helping students understand how values are formed and then offering experiences which give students the chance to become aware of their own values, they learn to understand themselves and their motivations better. *Values and Teaching* (1966) sets forth very clearly how this process can be accomplished.

The process of valuing is inextricably related to a second strategy, *decision-making*. The valuing process implies that the individual goes through a process whereby he rejects options which, if acted upon, would conflict with values he has come to hold. He decides "against" a particular option and "for" another one. This process of decision-making is one which is often overlooked by parents and teachers as children grow up. Too often children are *told* what to study, *told* how long they can wear their hair, *told* how to dress. Students who are given practice in the art of making decisions—weighing the potential risk or danger in a situation and balancing that with the potential reward or gain—will be more likely to make decisions which will help them meet their needs in non-destructive ways.

A third strategy is the *development of communication skills.* Man is basically a social animal. Whole theories of personality have evolved around his relationship to others of his species. Many of man's needs, whether they are labeled "love and belongingness" or "affection and respect," are derived from those around him.

A prerequisite to meeting these needs is the ability to communicate effectively. This means more than a facility with the language. Listening, accepting other points of view without censure, and being able to assimilate and reflect upon responses, are all integral aspects of communication. Confluent drug education programs strive to create an atmosphere which allows for open communication and practice in the use of communication skills. Such a focus assumes that if students become good communicators, they will be able to meet their interpersonal needs in an effective manner without relying on artificial, chemically-induced means.

By definition, a confluent drug education program will include a cognitive (information-based) component. This is critical, particularly if one recognizes the tendency of individuals to inhibit or distort knowledge presented to them in an effort to minimize internal or external conflicts and inconsistencies. In a study by Boris, Zinberg and Boris (1972), the researchers observed that adolescents tend to either hold on to or create their own myths concerning drug-related and other potentially stressful information, even after exposure to formal fact-oriented programs. The authors suggest that clinging with such tenacity to myth results from the ego's effort to minimize stress and internal conflict. For example, they state, "A fourteen-year old may not want to hear that marijuana is a relatively harmless drug, because if he were to accept that piece of information, he might fear that his wish to try new things could entice him to act and perhaps get into trouble, or his new knowledge force him into a conflict with his parents. Hence he may hold on to a myth—that marihuana is very dangerous. Doing so permits him to maintain a negative attitude towards marihuana which reduces the pressure he feels inside."

The role of information should thus not be minimized. However, the manner in which it is presented is crucial. Students should be allowed to formulate the questions and explore the issues meaningful to them in a setting whi and seeks to minimize stress and conflict.

THE ROLE OF THE TEA

The major function of the teacher in a con course is to help students learn about themse essential that the teacher refrain from man ways that satisfy either the teacher or the societal norms. The temptation is great to techniques; for example, to foist society students. Values must, instead, be developed personal choice. "Instead of giving young p that their task is to stand a dreary watch ove says John Gardner (1964), "we should be but bracing truth that it is their task to continuously in their own time."

Teachers are most successful in this e themselves as guides rather than as purveyo best teachers become, then, followers of assuming active roles only when they judge floundering or when clarification seems appr such a role, teachers allow students to take r own behavior. The teacher also has the ta atmosphere of trust and open-mindedness pe Students should feel that they will not be la for expressing their feelings and thoughts.

CONFLUENT DRUG EDUCA PROGRAM TYPOLOGIE

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THE ROLE OF THE TEACHER

The major function of the teacher in a confluent drug education course is to help students learn about themselves. To this end, it is essential that the teacher refrain from manipulating students in ways that satisfy either the teacher or the teacher's concept of societal norms. The temptation is great to use value processing techniques; for example, to foist society's norms upon the students. Values must, instead, be developed out of the process of personal choice. "Instead of giving young people the impression that their task is to stand a dreary watch over the ancient values," says John Gardner (1964), "we should be telling them the grim but bracing truth that it is their task to recreate those values continuously in their own time."

Teachers are most successful in this endeavor if they see themselves as guides rather than as purveyors of knowledge. The best teachers become, then, followers of the group activity, assuming active roles only when they judge the discussion to be floundering or when clarification seems appropriate. By assuming such a role, teachers allow students to take responsibility for their own behavior. The teacher also has the task of seeing that an atmosphere of trust and open-mindedness pervades the classroom. Students should feel that they will not be laughed at or criticized for expressing their feelings and thoughts.

CONFLUENT DRUG EDUCATION PROGRAM TYPOLOGIES

The concepts of confluent drug education can be presented in a variety of ways. Not all programs employ all of the strategies previously listed. The greatest diversity is apparent when the mode of program integration into school and community structure is considered.

- One basic approach creates a separate course within the school. This course emphasizes self-understanding, cover-

ing such topics as human needs, perception, self-concept and coping.

- Another approach seeks to integrate the goals and methods inherent in a confluent approach to drug education into already existing classes. Every class thus becomes a potential forum for clarifying values, practicing decision-making and communication skills and perhaps learning cognitive information about drugs. These experiences are planned as a part of the regular curriculum. They can also occur spontaneously if the atmosphere of the classroom is perceived as non-threatening. In program, a commitment to t underlying program concepts mus
- The third type of program see community in the drug educatio such an approach is that school of influences on a student's life. derived from an enlightened shattered unless a student rece growth and development from his

PART TWO
EVALUATION OF CONFLUENT DRUG EDUCATION PROGRAMS–A MULTI-DIMENSIONA

Confluent drug education programs concern themselves with some of the most studied dimensions of psychology. Self-concept, interpersonal relationships, valuing and decision making, all have associated with them a wealth of theories and research studies. This does not mean, however, that it is a simple task to accurately assess changes in these areas. Evaluation of any program which seeks to impact upon an individual's attitudes, behaviors and interpersonal functioning is at best difficult. This difficulty can, to some degree, be minimized through the utilization of various research techniques, all have inherent weaknesses, but when taken together they present a much more complete, composite picture of effects of the program.

DESCRIPTION OF TECHNIQUES

The following sections outline several basic research techniques which should be considered for inclusion in research plans.

Pencil and Paper Personality Measures

The social sciences have relied heavily upon questionnaires and tests to facilitate the conduct of research. Such measures have an important place in research plans and probably provide the best single indicators of change. Yet, there are many problems associated with their use.

Stanislav Andreski for one, in his rece *Sciences as Sorcery* (1973), expresses c sciences for their reliance on questionna somebody had tried to build a science making elaborate computations of t Accordingly, the following caveats sugge upon pencil and paper measurements to inadvisable.

One major area of concern involves field of psychology concerning the notio Most personality research assumes that a consistent in terms of the way he sees h being questioned by researchers who capacity for varied behavior. These rese the ability of humans to accept antit losing their feeling of honesty with sel theory, for example, accepts the coex within an individual. These researchers towards consistency in most psychologi artificial overlay on the personality wh "acceptable" choices.

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perceived as non-threatening. In order to adopt such a program, a commitment to teacher training and the underlying program concepts must be developed.

- The third type of program seeks to involve the entire community in the drug education effort. The rationale for such an approach is that school is but one of a wide array of influences on a student's life. Benefits and expectations derived from an enlightened school program can be shattered unless a student receives support for further growth and development from his community.

PART TWO
LUATION OF CONFLUENT DRUG EDUCATION PROGRAMS—A MULTI-DIMENSIONAL APPROACH

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Stanislav Andreski for one, in his recently released book, *Social Sciences as Sorcery* (1973), expresses discontent with the social sciences for their reliance on questionnaires by saying, "It is as if somebody had tried to build a science of meteorology solely by making elaborate computations of the fluttering of flags." Accordingly, the following caveats suggest to us that relying solely upon pencil and paper measurements to evaluate your program is inadvisable.

One major area of concern involves a theoretical battle in the field of psychology concerning the notion of personal consistency. Most personality research assumes that a person remains relatively consistent in terms of the way he sees himself. This assumption is being questioned by researchers who recognize the human capacity for varied behavior. These researchers also acknowledge the ability of humans to accept antithetical behavior without losing their feeling of honesty with self and with others. Such a theory, for example, accepts the coexistence of love and hate within an individual. These researchers further perceive a strain towards consistency in most psychological research, implying an artificial overlay on the personality which limits an individual's "acceptable" choices.

Personality measures assume that individuals respond in a relatively consistent manner. In direct contradiction to this assumption, Gergen and Wishnov (1965) found that three factors

significantly changed the way a person presents himself as measured on a typical self-esteem questionnaire. These factors were:

- The person with whom they were interacting
- The environment of the interaction (duration of the relationship)
- The motivation derived from the interaction

This new theory has vast implications in the area of personality testing. By systematically labelling individuals through the use of a particular instrument, the researcher may well be limiting the subject. failing to recognize his full range of expressions. Additionally, one must ask how much reliance can be placed on personality tests as effective measures of the way an individual "is" if, in fact, a person's social visage is as easily alterable as the above study indicates. An excellent argument for this approach to personality, accompanied by a distillation of research conducted in its support, can be found in an article by Gergen entitled "Personality Consistency in the Presentation of Self" (1968).

Another question arises around the issue of reliability and validity of instruments designed to measure aspects of human personality. Psychological researchers usually develop new instruments each time they commence a study. In some cases this is surely necessary. On the other hand, there has been relatively little work done to establish a respectable base of reliability and validity for most existent instruments. The instruments which have such a base often suffer, however, because items and scales are not updated to reflect societal changes. An example of such an instrument is the California Psychological Inventory (Gough, 1957), which has a well-established research base justifying its use, but includes, among other equally "irrelevant" items, a Femininity Scale which is chauvinistic to the point of insult when judged by today's standards.

Those who are selecting personality measures must carefully look at the instrument and its applicability to the intended target group. One should not assume that personality measures are cross-cultural or for that matter, even applicable to both sexes. This caveat was recently exemplified by a study which applied Rotter's theory of internal and external control to minority college students. As a result, Patricia Gurin "internal control" is not a unitary dimen students as Rotter (1966) has suggested. theoretical difference she developed a s internal and external control based on her t it is important to consider the reading level group to be tested.

Review of Records

Reviews and longitudinal comparisons overlooked as research tools. A number *measures* are readily available to researche settings. Student grades, attendance records, disciplinary records, for example, are all quantifiable data elements. When viewed provide independent measures of behavior directly to dimensions such as self-concept making. *A word of caution:* prior to collecti attempt to ascertain the accuracy of the widely differing policies on the emphasis information of this nature. Any variance accuracy of the records being studied.

Observation

Although the most costly in terms observation is potentially one of the m researcher has at his disposal. Observa particularly effective in determining change and student ↔ student interaction. There e observational frameworks which can be us interaction in the classroom.

Another facet of observation which has from researchers is simply to observe t teachers relate to the course of study in qu not always lend itself to quantification.

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nd its applicability to the intended target
assume that personality measures are
t matter, even applicable to both sexes.
y exemplified by a study which applied
ernal and external control to minority

college students. As a result, Patricia Gurin (1969) concluded that "internal control" is not a unitary dimension in Black college students as Rotter (1966) has suggested. In response to this theoretical difference she developed a scale which measures internal and external control based on her target group. Similarly, it is important to consider the reading level and age of the target group to be tested.

Review of Records

Reviews and longitudinal comparisons of archives are often overlooked as research tools. A number of such *unobtrusive measures* are readily available to researchers operating in school settings. Student grades, attendance records, tardiness patterns and disciplinary records, for example, are all easily collectable and quantifiable data elements. When viewed longitudinally, they provide independent measures of behavioral change which relate directly to dimensions such as self-concept, valuing and decision making. *A word of caution:* prior to collecting data of this nature, attempt to ascertain the accuracy of the records. Schools have widely differing policies on the emphasis placed on collecting information of this nature. Any variance naturally affects the accuracy of the records being studied.

Observation

Although the most costly in terms of time and money, observation is potentially one of the most effective tools a researcher has at his disposal. Observational techniques are particularly effective in determining changes in teacher ↔ student and student ↔ student interaction. There exists a wide variety of observational frameworks which can be used to categorize group interaction in the classroom.

Another facet of observation which has received less attention from researchers is simply to observe the way students and teachers relate to the course of study in question. This data does not always lend itself to quantification.

It is important, for example, to note that a teacher *felt* the course she was teaching changed the way she related to students. It is important to note that a student *felt* that the course was the

best thing that has happened to him in school, even if the instruments administered do not reflect that change. Such information can be gained by listening to students talk after class or by talking with students and teachers. It would also be useful to have them write their impressions of how the course affected them.

WHERE TO START

This section is designed to help the reader operationalize a multi-dimensional evaluation. Included are several items for consideration:

- Brief descriptions of several pencil and paper instruments designed to measure self-concept and interpersonal functioning
- Description of a framework for recording data from school records
- Descriptions of a group of classroom observation frameworks for measurement of interpersonal functioning and valuing

Suggested Paper and Pencil Measures[23]

Selection of instruments for review is both simple and difficult. It is simple because there are so many instruments to choose from. It is at the same time difficult since each instrument has differing reliability and validity attached to it; has been used with differing target groups; and attempts to measure widely differing aspects of personality.

The instruments included herein are suggested for possible use. By no means are they the only instruments available which could provide reliable data. As stated elsewhere in the handbook, before selecting any instrument, the researche acquainted with the scale and its devel history.[24]

Group Participation Scale

Authors: Pepinsky, H., Liegel, L. and Van

Source: Printed in *Journal of Abnormal* 47, pp. 415-419 (1952), as part of a Criterion in Counseling: A Group Par authors listed above.

Variables Measured: The scale was designe of *effective individual participation* "effectively participating group me defined as one who:

- Initiates
- Defines
- Sustains
- Directs

Description: The scale consists of 24 Thu "guess who" format. The respondent place in rank order the three items accurate description of his typical be group member can be asked to describ his group using the same process. Sa the scale are:

- Is a good follower
- Tries hard to do a good job

Administration and Scoring. The scale is test can be scored easily by hand, p being measured is small.

[23] There are many legal and psychological issues involved in personality testing in the schools For a discussion of some of the major problems we *strongly* recommend C.W. Sherrer and R A Roston, "Some Legal and Psychological Concerns about Personality Testing in the Public Schools," *Federal Bar Journal*, 30, pp. 111 118 (1971).

[24] The author acknowledges the use of two major revie *Social Psychological Attitudes* (1970) and *Measuring H* development of this section. These books greatly ea describing the instruments suggested for consideration.

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Pencil Measures[2 3]

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selecting any instrument, the researcher should become well acquainted with the scale and its developmental and research history.[2 4]

Group Participation Scale

Authors: Pepinsky, H., Liegel, L. and Van Atta, E. L.

Source: Printed in *Journal of Abnormal and Social Psychology*, 47, pp. 415-419 (1952), as part of an article entitled: "The Criterion in Counseling: A Group Participation Scale" by the authors listed above.

Variables Measured. The scale was designed to provide a measure of *effective individual participation* in a social group. An "effectively participating group member" is operationally defined as one who:

- Initiates
- Defines
- Sustains
- Directs

Description: The scale consists of 24 Thurstone-scaled items in a "guess who" format. The respondent is asked to check and place in rank order the three items which give the most accurate description of his typical behavior in a group. Each group member can be asked to describe the other members of his group using the same process. Sample items included in the scale are:

- Is a good follower
- Tries hard to do a good job

Administration and Scoring: The scale is self administering. The test can be scored easily by hand, particularly if the group being measured is small.

[2 4] The author acknowledges the use of two major reviews of instruments, *Measures of Social Psychological Attitudes* (1970) and *Measuring Human Behavior* (1973), in the development of this section. These books greatly eased the task of selecting and describing the instruments suggested for consideration.

Sample. The scale has been used primarily with college students. The items seem easily comprehensible. The test format is uncomplicated. Thus, there seems little reason why the scale should not be tried with high school students. Norms have been obtained for 104 male undergraduates at the State College of Washington and Ohio State University.

Reliability: Split-half reliability coefficient ranged from .73 to .92 corrected by Spearman-Bowman to .84 to .96 in a sample drawn from freshman orientation course in the College of Education at Ohio State University. No test-retest data is available.

Validity: Validity estimates have been obtained through 1) agreement of group perceptions and teacher perceptions of the individual's effective participation in a group and 2) agreement of individual's self perception and group's perception of his adequacy.

Criticisms: Only face validity can be reported for the scale. The measures which had originally been used to check validity (peer and teacher ratings) were not independent of the actual measure. There has been little work on the instrument since its conception. It should thus be restandardized and validated.

Suggestions for Use: Although this scale was not developed as a classroom measure, it seems easily adaptable, particularly if the teacher allows for group interaction as a part of the class–a prerequisite for effective confluent drug education programs.

Nowicki-Strickland Locus of Control Scale for Children

Authors: Nowicki, S. and Strickland, B. R.

Source. Printed in Nowicki, S. and Strickland, B. R. "A Locus of Control Scale for Children." *Journal of Consulting and Clinical Psychology* (1973, in press).

Variables Measured: The scale purports to measure internal vs. external locus of control (Rotter, 1966). Locus of control describes the degree to which a person believes he possesses or lacks the power to control wha Lefcourt (1966) states, "Internal perception of positive and/or negat consequence of one's own action and control; external control refers to the and/or negative events as being ur behavior in certain situations and the control."

Description: The scale is a 40 item test in asked to answer yes or no to ea recommend the use of two short fo and another for grades 7-12. These f subset of items in the complete scale. scale:

- Do you believe that you can stop a cold?
  a) yes b) no
- Do you feel that most of the tim their children have to say?
  a) yes b) no
- When you get punished does it good reason at all?
  a) yes b) no

Administration and Scoring. The test is ad each item read twice. It has also bee test authors make no recommendatio administration or time allowed to c can easily be scored by hand.

Sample: A variety of samples, ranging fr college, have been utilized. Main sa ment of the scale consisted of Caucasian) ranging in age from third four separate communities.

Reliability. Current estimates of internal the range of acceptability (ranging fr

s been used primarily with college students. easily co. ,rehensible. The test format is Thus, there seems little reason why the scale ried with high school students. Norms have for 104 male undergraduates at the State ngton and Ohio State University.

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The scale purports to measure internal vs. f control (Rotter, 1966). Locus of control gree to which a person believes he possesses or lacks the power to control what happens to him. As Lefcourt (1966) states, "Internal control refers to the perception of positive and/or negative events as being a consequence of one's own action and thereby under personal control, external control refers to the perception of positive and/or negative events as being unrelated to one's own behavior in certain situations and therefore beyond personal control."

Description. The scale is a 40 item test in which respondents are asked to answer yes or no to each item. The authors recommend the use of two short forms, one for grades 3-6 and another for grades 7-12. These forms are derived from a subset of items in the complete scale. Sample items from the scale:

- Do you believe that you can stop yourself from catching a cold?
  a) yes b) no
- Do you feel that most of the time parents listen to what their children have to say?
  a) yes b) no
- When you get punished does it usually seem it is for no good reason at all?
  a) yes b) no

Administration and Scoring. The test is administered orally, with each item read twice. It has also been self-administered. The test authors make no recommendation concerning method of administration or time allowed to complete the scale. Tests can easily be scored by hand.

Sample. A variety of samples, ranging from third grade through college, have been utilized. Main sample used for development of the scale consisted of 1017 children (mostly Caucasian) ranging in age from third to twelfth graders, in four separate communities.

Reliability. Current estimates of internal consistency are within the range of acceptability (ranging from .63 for grades 3 5 to

81 for grade 12). Test-retest reliabilities are also acceptable. Tested at a six-week interval test-retest correlations ranged from .63 for the third grade students tested to .71 for the tenth graders.

Correlates: The authors report a significant relationship between internality as measured on the scale and higher grade point averages in one sample of twelfth graders and another of college students. Internality was also found to be significantly related to achievement test scores for the third, fifth through seventh, tenth and twelfth grade males, but not the females. Correlations were also achieved with the Intellectual Achievement Responsibility Questionnaire (Crandall et al. 1965), using a sample of 182 third grade and 171 seventh grade Blacks. Correlations with I+ were significant for both groups (r=.31 and r=.51 respectively).

Validity: Not established.

Criticisms: The unidimensionality of this type of scale, as mentioned earlier in this chapter, is still open to question, and must await the results of factor analysis. Also, this measure should be correlated with other measures of locus of control for purposes of establishing validity.

Suggestions for Use: The concept of internal vs. external locus of control relates directly to the issue of drug use and abuse in many ways. Motivational factors for drug use which are often cited such as alienation, powerlessness, helplessness, and peer pressure relate directly to the issue of external control. It can be hypothesized that an individual who operates primarily through internal control mechanisms will be more resistant to some of the motivational factors which influence drug use; he will be more equipped to seek positive alternatives to their use. Activities such as the values clarification process, and increased responsiveness of teachers and administrators to student needs point to enhanced internal control processes for students.

Personal Orientation Inventory (POI)

Author: Shostrom, E.

Source: Educational and Industrial Test
California 92107.

Variables Measured: The scale seeks to m
as defined by Maslow (1954, 1962).
of two major scales: an Inner Sup
Competence Scale. Inner support is
of a person to act on, and be guide
and motives in contrast to respondi
Time competence is defined as the te
live primarily in the present, free o
future events. The inner support varia
five components of self-actualization
sists of a pair of closely related, b
which, when scored, produce ten subs

Description: A person taking the test com
value judgment items. He is asked
opposing values is closer to what
himself. The following sample test
trate the format and type of forced-
the test:

- a. I am afraid to be angry at tho
  b. I feel free to be angry at thos
- a. I accept inconsistencies withi
  b. I cannot accept inconsistencie

(Items 52 and 72 on POI)

Administration and Scoring: Time allowed
thirty minutes. Scoring can either b
with the use of a computer.

Sample: Norms and profiles are available
variety of populations including high

Reliability. Test retest correlations on all s
.82 in a reliability study administe
twice, the second time after a one w
scales produced reliability coeffici
respectively. There have been no
internal consistency of the measure.

). Test-retest reliabilities are also acceptable. veek interval test-retest correlations ranged third grade students tested to .71 for the

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nventory (POI)

Source: Educational and Industrial Testing Service, San Diego, California 92107.

Variables Measured: The scale seeks to measure self-actualization as defined by Maslow (1954, 1962). The instrument consists of two major scales. an Inner Support Scale and a Time Competence Scale. Inner support is defined as the tendency of a person to act on, and be guided by his own principles and motives in contrast to responding to external pressures. Time competence is defined as the tendency of the person to live primarily in the present, free of anxiety about past or future events. The inner support variable is broken down into five components of self-actualization. Each component consists of a pair of closely related, but contrasting variables which, when scored, produce ten subscales.

Description: A person taking the test completes 150 comparative value judgment items. He is asked to choose which of two opposing values is closer to what he holds to be true for himself. The following sample test questions serve to illustrate the format and type of forced-choice items included in the test:

- a. I am afraid to be angry at those I love.
  b. I feel free to be angry at those I love.
- a. I accept inconsistencies within myself.
  b. I cannot accept inconsistencies within myself.
  (Items 52 and 72 on POI)

Administration and Scoring: Time allowed for the tests is usually thirty minutes. Scoring can either be completed by hand or with the use of a computer.

Sample. Norms and profiles are available in the test manual for a variety of populations including high school students.

Reliability: Test-retest correlations on all scales ranged from .52 to .82 in a reliability study administered to college students twice, the second time after a one week interval. The major scales produced reliability coefficients of .71 and .77 respectively. There have been no studies to determine internal consistency of the measure.

Correlates. There is a wealth of reported correlational validity data relating to the POI (Shostrom, 1972; Knapp, 1971). Studies show, for example, that the major scales were positively related to satisfaction with college, ability to communicate empathetic understanding in counseling situations and the interpersonal effectiveness of dormitory assistants. Also, the POI was found to correlate, but not significantly, with the Neuroticism/Stability dimension of the Eysenck Personality Inventory (Eysenck, 1963).

Validity: Not established.

Criticism. The ten subscales have not been shown to be statistically independent. Reliance on the subscales could thus lead to over interpretation of the data.

Suggestions for Use: The POI has a considerable amount of appeal; it seeks to measure a number of the variables important to confluent drug education programs. If used, it is recommended that the researcher utilize the two major scales as an adequate measure of self-actualization and forego use of the subscales.

The Piers-Harris Children's Self-Concept Scale

Authors: Piers, E. and Harris, D.

Source: Counselor Recording and Tests
Box 6184
Acklen Station
Nashville, Tennessee 37212

Variables Measured: The scale is designed primarily for work with children. It focuses on several components of self-concept, including physical aspects, abilities and personality.

Description: The test consists of 80 yes-no items. The items originated from an item pool developed from Jersild's (1952) categories: physical characteristics and appearance, clothing and grooming, home and family, and attitudes toward school, among others. Sample items are as follows:

- I am a happy person.
  a) yes b) no
- I have good ideas.
  a) yes b) no
- I am often afraid.
  a) yes b) no

(Items 2, 54 and 74 respectivel
Children's Self-Concept Scale)

Administration and Scoring: The test is
gested time for administration is 1
either be hand or computer scored.

Sample. Fifteen classrooms participated
analysis used to develop the test. Nor
for 1183 school children.

Reliability: Test-retest reliability was det
large sample of children tested at
intervals. Split half reliability coeffic
.93 on an early version of the scale.

Correlates. The scale correlates positively
with achievement and intelligence.

Validity: The scale correlates positively
self-concept scale. Teacher and peer
social effectiveness or superego stren
to .49.

Criticisms: Perhaps the most troublesome
lack of data which would relate
behavior. The scale does not take
behavioral correlates of self concept.

Suggestions for Use: The Piers-Harris Child
is probably one of the best child
available. As a part of a research pl
want to determine to what degree b
as risk taking, assertiveness in group
interpersonal functioning relate to th

Self-Esteem Scale

Author: Rosenberg, M.

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education programs. If used, it is recom-
researcher utilize the two major scales as an
of self-actualization and forego use of the

en's Self-Concept Scale

Harris, D.

cording and Tests

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The scale is designed primarily for work with
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l aspects, abilities and personality.

t consists of 80 yes-no items. The items
an item pool developed from Jersild's (1952)
cal characteristics and appearance, clothing
me and family, and attitudes toward school,
mple items are as follows:

y person.

b) no

COUNCIL

- I have good ideas.
  a) yes b) no
- I am often afraid.
  a) yes b) no

(Items 2, 54 and 74 respectively from the Piers-Harris Children's Self-Concept Scale)

Administration and Scoring. The test is self-administered. Suggested time for administration is 15-20 minutes. Test can either be hand or computer scored.

Sample: Fifteen classrooms participated in the original item analysis used to develop the test. Norms have been calculated for 1183 school children.

Reliability: Test-retest reliability was determined to be .77 for a large sample of children tested at two and four month intervals. Split half reliability coefficients ranged from .78 to .93 on an early version of the scale.

Correlates. The scale correlates positively, but on the low side, with achievement and intelligence.

Validity: The scale correlates positively (.68) with the Lipsitt self-concept scale. Teacher and peer ratings of self-concept, social effectiveness or superego strength correlated from .06 to .49.

Criticisms: Perhaps the most troublesome aspect of this scale is the lack of data which would relate self-concept to actual behavior. The scale does not take into account possible behavioral correlates of self concept.

Suggestions for Use: The Piers-Harris Children's Self-Concept Scale is probably one of the best child self-concept measures available. As a part of a research plan, the investigator may want to determine to what degree behavioral indicators such as risk taking, assertiveness in group situations, or observed interpersonal functioning relate to the scale.

Self-Esteem Scale

Author: Rosenberg, M.

Source: Printed in *Society and the Adolescent Self Image* (1965)

Variables Measured: The scale was designed to measure self acceptance as a component of self-esteem.

Description: The Self-Esteem Scale consists of ten items. Items are answered on a four point scale which ranges from strongly agree to strongly disagree. The scale was designed to be unidimensional; it measures the degree to which an individual likes or approves of himself. Sample items are listed below:

- I feel that I'm a person of worth at least on an equal basis with others.
  a. strongly agree
  b. agree
  c. disagree
  d. strongly disagree
- All in all, I am inclined to think that I am a failure.
  a. strongly agree
  b. agree
  c. disagree
  d. strongly disagree
- I take a positive attitude toward myself.
  a. strongly agree
  b. agree
  c. disagree
  d. strongly disagree

Administration and Scoring: The test is self administering and should take no longer than five minutes to complete. The test can be scored by hand.

Sample: A sample of 5024 high school juniors and seniors, from 10 randomly selected New York schools, made up Rosenberg's initial sample. Since then the scale has been used with a variety of student populations.

Reliability. The test-retest reliability coefficient over a two week period was found to be .85. A Guttman scale reproducibility coefficient of .92 was also obtained.

Correlates: Rosenberg relates self-esteem to indicators such as less shyness and depression, more assertiveness and greater involvement in extracurricular activities.

Validity: The scale seems to have credible concurrent validity correlating from .56 to .83 with several measures of self-esteem (Silber and Teppett, 1965).

Criticisms: For no apparent reason, the
recent attention. Thus, there is little i
current or past usage of the test. Nur
strongly criticizes the wisdom of ut
format for scales, stating that the sm
forced rectangular distribution of
artificial and likely to produce only gr
among people.

Suggestions for Use: The scale is quite b
tered. It could be effectively used
acceptance, a goal of many conf
programs.

Stages of Moral Development

Author: Kohlberg, L.

Source: Printed in *Stages in the Developm
and Action* (1961)

Variables Measured: This scoring system di
the development of moral judgment
equated with an orientation towards
ment to a stage which bases moral judg
or principles encompassing broad un
stages relate to 25 aspects of intention
(1948), grouped into eight categorie
tions and motives, rules and authorit
punitive justice.

Description: Kohlberg's stages of moral
scoring system which is applicable to a
morality. Kohlberg has also developed
13 dilemmas for standardized test
designed to reveal a subject's level o
Several of these dilemmas evolve from t

> In Europe, a woman was near death fro
> save her, a form of radium that a drugg
> recently discovered. The druggist was c
> what the drug cost him to make. Th

ociety and the Adolescent Self Image (1965)

The scale was designed to measure self component of self-esteem.

f-Esteem Scale consists of ten items. Items are four point scale which ranges from strongly gly disagree. The scale was designed to be it measures the degree to which an individual es of himself. Sample items are listed below:

t I'm a person of worth at least on an equal others.

y agree
c. disagree
d. strongly disagree

I am inclined to think that I am a failure.

y agree
c. disagree
d. strongly disagree

ositive attitude toward myself.

y agree
c. disagree
d. strongly disagree

Scoring: The test is self administering and longer than five minutes to complete. The test by hand.

of 5024 high school juniors and seniors, from selected New York schools, made up Rosen- ample. Since then the scale has been used with udent populations.

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erg relates self-esteem to indicators such as less depression, more assertiveness and greater n extracurricular activities.

le seems to have credible concurrent validity rom .56 to .83 with several measures of ilber and Teppett, 1965).

Criticisms: For no apparent reason, the scale has received little recent attention. Thus, there is little information available on current or past usage of the test. Nunnally (1967, pp. 61-66) strongly criticizes the wisdom of utilizing a Guttman scale format for scales, stating that the small number of items and forced rectangular distribution of Guttman scale items is artificial and likely to produce only gross, ordinal distinctions among people.

Suggestions for Use: The scale is quite brief and easily administered. It could be effectively used as a measure of self acceptance, a goal of many confluent drug education programs.

Stages of Moral Development

Author: Kohlberg, L.

Source: Printed in *Stages in the Development of Moral Thought and Action* (1961)

Variables Measured: This scoring system distinguishes six stages in the development of moral judgment ranging from a stage equated with an orientation towards obedience and punishment to a stage which bases moral judgment upon conscience or principles encompassing broad universal truths. The six stages relate to 25 aspects of intentionality studied by Piaget (1948), grouped into eight categories: value, choice, sanctions and motives, rules and authority, positive justice and punitive justice.

Description: Kohlberg's stages of moral development create a scoring system which is applicable to *any* situation relating to morality. Kohlberg has also developed (1963, 1964) a set of 13 dilemmas for standardized test purposes which are designed to reveal a subject's level of moral development. Several of these dilemmas evolve from the following scenario:

> In Europe, a woman was near death from cancer. One drug might save her, a form of radium that a druggist in the same town had recently discovered. The druggist was charging $2,000, ten times what the drug cost him to make. The sick woman's husband,

Heinz, went to everyone he knew to borrow the money, but he could only get together about half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said, "No." The husband got desperate and broke into the man's store to steal the drug for his wife. Should the husband have done that? Why?

At each point in the development of the scenario the respondent is asked several questions, such as:

Did the druggist have a right to charge that much when there was no law actually setting a limit to the price? Why?

(as quoted in *Measuring Human Behavior,* 1973)

Administration and Scoring: The questionnaire is self-administering. Scoring (carried out by trained judges) is difficult to master, as it involves placing each response within one of the 25 intentionality aspects mentioned previously. Kohlberg's appendix (1961) includes an explanation of scoring procedures.

Sample. Conceptually, Kohlberg's stages can be applied to any population. The questionnaire, however, has been used primarily with children and adolescents.

Reliability: Interjudge reliability ranges from .83 to .93 depending on the training of the judges. Test-retest reliability ranges from .65 to .80.

Correlates. The system correlates (.46) with teacher ratings of moral conscientiousness. In a study of obedience (Milgram 1963), 4 out of 6 Stage Six subjects disobeyed orders to give increasingly severe electrical shocks to a stooge; only 3 out of 24 subjects at lower moral stages refused to continue the shock treatment. At Berkeley, 80% of Stage Six subjects and 50% of Stage Five subjects participated in the original free speech sit-in, while only 10% of Stage Three and Four subjects sat in.

Criticisms: The scoring system is quite complex and requires an extensive training period.

Suggestions for Use: If a confluent drug education program seeks to help students develop values through personal choice, the appeal of this scoring system becomes apparent. By focusing on the valuing process and the individual's decision-making skills, teachers encourage and foster t moral development.

Self Social Construct Tasks (SSCT)

Author: Ziller, Robert

Source: Dr. Robert Ziller, Department of of Florida, Gainesville, Florida

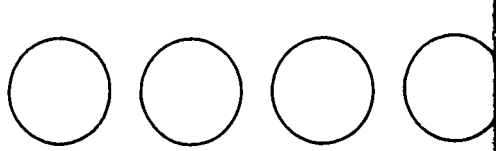
Variables Measured: Self-esteem, social int seven other variables are measured in individual's perceptions of how h environment.

Description: Each of the ten compone topological representations to which respond. In completing the tasks, t place himself symbolically within t represent his relationships with thos of test items are as follows:

Self-Esteem Item (children and stu

1. The circles below stand for p with the letter standing for one Do this in any way you like, b once and do not omit anyone.

F - a friend G - grandm
S - a selfish person L - someon
Y- yourself P - a princi



Social Interest Item (children and

2. The circles in the box on the ents, teachers and friends. Dr yourself anywhere in the box.

everyone he knew to borrow the money, but he together about half of what it cost. He told the is wife was dying and asked him to sell it cheaper later. But the druggist said, "No." The husband nd broke into the man's store to steal the drug for d the husband have done that? Why?

n the development of the scenario the d several questions, such as:

t have a right to charge that much when there was setting a limit to the price? Why?

suring Human Behavior, 1973)

coring: The questionnaire is self-administer- ried out by trained judges) is difficult to lves placing each response within one of the aspects mentioned previously. Kohlberg's includes an explanation of scoring pro-

, Kohlberg's stages can be applied any questionnaire, however, has been used ildren and adolescents.

reliability ranges from 83 to .93 depending of the judges. Test retest reliability ranges

m correlates (.46) with teacher ratings of ousness. In a study of obedience (Milgram 6 Stage Six subjects disobeyed orders to give e electrical shocks to a stooge; only 3 out of ower moral stages refused to continue the At Berkeley, 80% of Stage Six subjects and ve subjects participated in the original free hile only 10% of Stage Three and Four

g system is quite complex and requires an period.

f a confluent drug education program seeks develop values through personal choice, the oring system becomes parent. By focusing rocess and the individual's decision-making skills, teachers encourage and foster the growth of a student's moral development.

Self Social Construct Tasks (SSCT)

Author: Ziller, Robert

Source: Dr. Robert Ziller, Department of Psychology, University of Florida, Gainesville, Florida

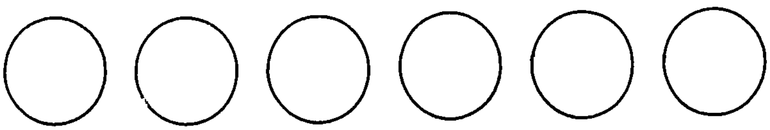
Variables Measured. Self-esteem, social interest, self-centrality and seven other variables are measured in a manner which taps an individual's perceptions of how he relates to his social environment.

Description. Each of the ten components includes a series of topological representations to which the subject is asked to respond. In completing the tasks, the individual is asked to place himself symbolically within these frameworks, which represent his relationships with those around him. Examples of test items are as follows:

Self-Esteem Item (children and student form)

1. The circles below stand for people. Mark each circle with the letter standing for one of the people in the list. Do this in any way you like, but use each person only once and do not omit anyone.

F - a friend	G - grandmother
S - a selfish person	L - someone you hope to be like
Y - yourself	P - a principal



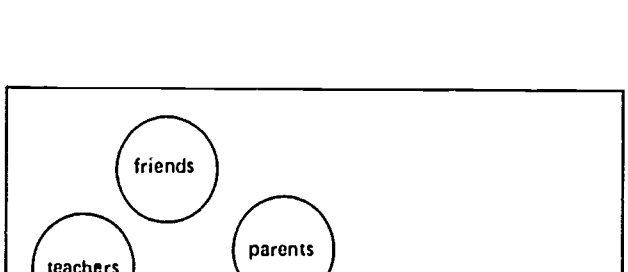
Social Interest Item (children and student form)

2. The circles in the box on the right stand for your parents, teachers and friends. Draw a circle to represent yourself anywhere in the box.

Administration and Scoring. The time recommended for completion of all the tasks is forty minutes. One of the delights of this instrument is the ease with which it is scored. Items for each component are scattered throughout the test booklet. Upon completion, the items are grouped according to tasks, scored on an individual basis and then averaged to obtain a composite score for each of the task components. Scoring instructions are included in the handbook which accompanies the test booklets.

Sample: Mean scores exist for a sample of 298 male teachers, principals and superintendents. Appropriate data and scores on this sample are included in the test handbook. In addition, mean scores exist for a sample of schoolchildren, grades 4-12. Even though norms have not been calculated, the Self-Social Construct Tasks have been administered to a wide range of adults, students and young children. (There are three separate test booklets, one for each group.)

Reliability: Split half reliability is quite high where it is available for the components of each test. Some components were recently added, therefore, reliability data has not yet been gathered. The split half reliability, corrected for length, ranges from a high of .92 for the social interest component (student and children's form) to a low of .63 for the inclusion component which presents the same items on all three forms. A complete listing of split half reliability data can be found in the handbook which accompanies the instruments. No test-retest reliability data is available.



Correlates: As reported by Zille et al. component differentiated between group isolates as determined by a another study Asian Indian adoles tively closed and cohesive extende pare with a sample of American a age, showed higher social interest. found that children who moved fr munities placed the self in a more completing the self-centrality task t which had remained in the same com

Validity: The originator of the instrume analysis comparing "self/other" items see Self Concept Scale (Fitts, 195 Inventory (Coopersmith, 1967) wit struct Tasks. On this basis, a minimal found between the items on the thre

Criticisms: The instrument has a number with it. Carlson (1970) considers difficulties to be:

- Failure to distinguish between esteem
- Manifestation of a sex bias (po unapplicable to females)
- Manifestation of an unintended

Suggestions for Use: The Self-Social Const ing primarily because of their flexib tasks listed previously can be remove and used for any number of specific this modified procedure is provided i (Ziller, 1969). The investigator hypoth were alienated from the predominant self-esteem, low social interest and h hypothesis was supported to a s investigator administered the self-este self-centrality tasks to children with neuropsychiatric adult patients). Sam

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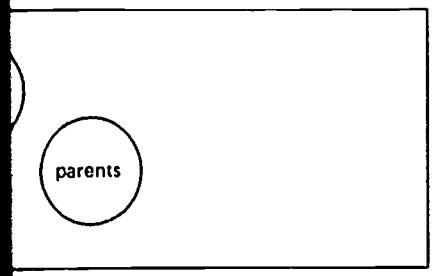

Correlates: As reported by Ziller et al. (1969), the self-esteem component differentiated between popular students and group isolates as determined by a sociometric measure. In another study Asian Indian adolescents (members of relatively closed and cohesive extended families), when compared with a sample of American adolescents matched for age, showed higher social interest. In another study, it was found that children who moved frequently between communities placed the self in a more central position when completing the self-centrality task than a comparable group which had remained in the same community all their lives.

Validity: The originator of the instrument recently ran an item analysis comparing "self/other" items included in the Tennessee Self Concept Scale (Fitts, 1956) and the Self-Esteem Inventory (Coopersmith, 1967) with the Self-Social Construct Tasks. On this basis, a minimal positive correlation was found between the items on the three instruments.

Criticisms: The instrument has a number of problems associated with it. Carlson (1970) considers the major theoretical difficulties to be:

- Failure to distinguish between sources and level of esteem
- Manifestation of a sex bias (possibly making the scale unapplicable to females).
- Manifestation of an unintended cultural bias

Suggestions for Use. The Self-Social Construct Tasks are interesting primarily because of their flexibility. For example, the tasks listed previously can be removed from the test booklet and used for any number of specific purposes. Support for this modified procedure is provided in a study on alienation (Ziller, 1969). The investigator hypothesized that groups who were alienated from the predominant culture would have low self-esteem, low social interest and high self-centrality. The hypothesis was supported to a significant degree (the investigator administered the self-esteem, social interest and self-centrality tasks to children with behavior problems and neuropsychiatric adult patients). Samples of adult males over

forty and Black schoolchildren were found to express low social interest and high self-centrality, however, low self-esteem was not found to be present. Tasks also merit attention because they are preverbal, thus relatively unobtrusive. It is recommended that, due to a number of unanswered reliability and validity questions, the Tasks be used in conjunction with another instrument which measures a similar dimension.

Review of Records: Suggested Measures

School records should be reviewed using logical well-conceived instruments which allow for the collection of only that data which is pertinent to the study. Such a series of instruments can be found in *Attitudes Toward School–Grades K-12* published by Instructional Objectives Exchange, Box 24095, Los Angeles, California, 90024. The book contains a section devoted to data gathering in the following areas:

- School conduct (Compliance with school rules)
- School tardiness
- School attendance
- Class attendance
- Class tardiness
- Grade level completion

Sample data collection forms for primary, intermediate and secondary levels are provided. Scoring instructions are also included.

Observation: Suggested Measures

Numerous systematized observational frameworks are available which, when utilized, will provide a detailed analysis of classroom interaction. Two such frameworks are suggested for consideration.

Hill Interaction Matrix (HIM)

Author: Hill, W. F.

Source: William Fawcett Hill
Youth Studies Center
University of Southern California
Los Angeles, California 90007

Variables Measured: The Hill Interactio system for observing group behavior. two dimensions of group behavior: group talks about) and 2) *work style.*

The content dimension is comprise Topic–topics external to the actu Group–conversation about the grou discussion in an historical manner a group member; and 4) Relationship– now" relationships and the reaction one another.

Five categories correspond to the s matrix, Work Style: 1) Responsive–l behavior takes place; 2) Conventio informal social group conversations; which asserts independence from gro tive–problems are controlled by the group are allowed to question or rec 5) Confrontive–a group member i behavior or a problem situation and for identifying suitable solutions.

Description: The HIM is a scoring system interactions are assigned to one matr the appropriate content and work-sty

Administration and Scoring: The HIM c observation or by listening to tap observer rates every verbal respon appropriate matrix category. The facilitated by explicit behavioral de each dimension.

Sample: The HIM was originally desig psychotherapy sessions. It has, howe which focus on group participation.

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ix (HIM)

Source: William Fawcett Hill
Youth Studies Center
University of Southern California
Los Angeles, California 90007

Variables Measured: The Hill Interaction Matrix is a scoring system for observing group behavior. As such, it focuses on two dimensions of group behavior: 1) *content* (what the group talks about) and 2) *work style.*

The content dimension is comprised of four categories: 1) Topic–topics external to the actual group concerns; 2) Group–conversation about the group itself; 3) Personal–discussion in an historical manner about the problems of a group member; and 4) Relationship–talking about "here and now" relationships and the reactions of group members to one another.

Five categories correspond to the second dimension of the matrix, Work Style: 1) Responsive–little or no spontaneous behavior takes place; 2) Conventional–behavior resembles informal social group conversations; 3) Assertive–behavior which asserts independence from group pressure; 4) Speculative–problems are controlled by the individual; others in the group are allowed to question or recommend solutions; and 5) Confrontive–a group member is faced with his own behavior or a problem situation and must take responsibility for identifying suitable solutions.

Description. The HIM is a scoring system only. In scoring, verbal interactions are assigned to one matrix cell, corresponding to the appropriate content and work-style categories.

Administration and Scoring: The HIM can be utilized in direct observation or by listening to taped group sessions. The observer rates every verbal response by placing it in the appropriate matrix category. The training of observers is facilitated by explicit behavioral descriptions, equated with each dimension.

Sample: The HIM was originally designed to analyze group psychotherapy sessions. It has, however, been used in classes which focus on group participation.

Reliability: Inter-rater reliability for three judges averaged 70% on one form. The newer scale, HIM-G, has not been completely checked for reliability.

Validity: Most validity data are based on analyses of group psychotherapy sessions. The scoring system, for example, facilitated differentiation between *non-directive, group-analytic* and *guided* group interactions.

Suggestions for Use: Although this system was initially designed for therapeutic group analysis, the categories have relevance for classes designed to enhance student self-understanding. Although the higher levels of the matrix would probably not be utilized for confluent drug education, responses for other cells will provide indicators of the climate in the classroom.

Interaction Process Analysis (IPA)

Author: Bales, Robert F.

Source: Addison-Wesley Publishing Co., Inc.
Reading, Massachusetts
see also *Personality and Interpersonal Behavior* (1970)

Variables Measured: In developing this system of analysis, Bales divides small group interactions into twelve response categories such as those which: 1) show solidarity—raise the status of others, gives help; 2) ask for orinetation-information, repetition, confirmation; and 3) show antogonism—deflate the status of others; defend or assert.

Categories 1-3 and 10-12 rate positive and negative socio-emotional behaviors. Categories 4-6 and 7-9 are concerned with the initiation of, or request for, task behaviors.

Description: This system can be used with a mechanized Interaction Recorder (Bales and Gerbands, 1948). The Recorder consists of a wide paper tape upon which units of interaction are coded and recorded. Used without the machine, the observer manually records interactions on appropriate scoring forms. Taped verbal interactions can be analyzed in the same manner, with less validity.

Administration and Scoring: To use t
Analysis, Bales (1950) suggests that t
monitor the group session. Two
interaction. The third monitors t
impressions of the discussion. Gene
Bales (1950) formulated several indi
from the scores.

Sample: Norms have been established
groups like chess players, a pre-sch
discussion group. The Interaction Pr
used in a wide variety of group sessio
classroom to therapy sessions.

Reliability: Inter-rater rank order correlati
as .99 after six hours of training in sc

Correlates: IPA significantly differentiated
at the University of Wisconsin. (Sign
found between concept-oriented a
modes of teaching.)

Suggestions for Use: The IPA is used mo
group setting. Bales' optimal plan for
if the researcher is willing to accept c
the results.

A less formal, yet nonetheless systemat
measure the degree of value-related student
in *Values and Teaching* (1966). The book
sive experimental design which can be imp
teachers. The researcher is referred directly
information.

For Further Direction

Before making a final decision about
niques, you should "shop around" and beco
of the measures available. There are a num
information:

1. *The Mental Measurements Yearboo*
contains evaluative summaries of m

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(Bales and Gerbands, 1948). The Recorder
paper tape upon which units of interaction
corded. Used without the machine, the
records interactions on appropriate scoring
al interactions can be analyzed in the same
alidity.

Administration and Scoring: To use the Interaction Process Analysis, Bales (1950) suggests that three-man observer teams monitor the group session. Two monitors record each interaction. The third monitors the tape and notes his impressions of the discussion. Generally, scoring is simple; Bales (1950) formulated several indices which can be derived from the scores.

Sample: Norms have been established for non-representative groups like chess players, a pre-school gang, and a thesis discussion group. The Interaction Process Analysis has been used in a wide variety of group sessions which range from the classroom to therapy sessions.

Reliability: Inter-rater rank order correlations are reported as high as .99 after six hours of training in scoring.

Correlates: IPA significantly differentiated between teaching styles at the University of Wisconsin. (Significant differences were found between concept-oriented and case study-oriented modes of teaching.)

Suggestions for Use: The IPA is used most effectively in a small group setting. Bales' optimal plan for scoring can be modified if the researcher is willing to accept changes in the validity of the results.

A less formal, yet nonetheless systematic evaluation system to measure the degree of value-related student behavior can be found in *Values and Teaching* (1966). The book outlines a comprehensive experimental design which can be implemented by individual teachers. The researcher is referred directly to the book for more information.

For Further Direction

Before making a final decision about instruments and techniques, you should "shop around" and become familiar with many of the measures available. There are a number of sources for this information:

1. *The Mental Measurements Yearbook,* edited by O. Buros, contains evaluative summaries of most of the well known

copyrighted personality scales. This book can be found in the reference section of most university libraries.

2. *Measures of Social Psychological Attitudes* by John P. Robinson and Phillip R. Shaver provides a comprehensive, evaluated listing of empirical measures relating to self-esteem, life satisfaction and happiness, alienation, anomia and values. The book includes, when possible, reproductions of actual scale items and scoring instructions. It is possible, but not as likely, that the book will be found in a university library. If unable to find it, it can be ordered from:

   The Publications Division
   Institute for Social Research
   The University of Michigan
   P. O. Box 1248
   Ann Arbor, Michigan 48106

3. A third recommended reference, entitled *Measuring Human Behavior,* critiques eighty-four measures of inter-personal functioning. The book w
   Miles, Dale Lake and Ralph E
   critiques, it includes an indexe
   instrument reviews, including su
   book is locally unavailable, copie
   from: Teachers College Press, 12
   New York, New York.

4. To acquaint you with unobtrusi
   er titled *Unobtrusive Measures:*
   the Social Sciences. This book,
   presents an insightful, highly r
   unobtrusive measures and their ap

5. *Mirrors for Behavior: An Anthol*
   vation Instruments, edited by A
   Boyer, contains reviews of 79 ob
   of which are applicable to the c
   number of them were developed
   mind (such as counseling analysis
   by: Research for Better School
   Street, Philadelphia, Pennsylvania

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commended reference, entitled *Measuring vior,* critiques eighty-four measures of inter-

personal functioning. The book was authored by Matthew Miles, Dale Lake and Ralph Earle. In addition to the critiques, it includes an indexed collection of twenty instrument reviews, including subject areas. Again, if the book is locally unavailable, copies can be ordered directly from: Teachers College Press, 1230 Amsterdam Avenue, New York, New York.

4. To acquaint you with unobtrusive measures, is a primer entitled *Unobtrusive Measures: Nonreactive Research in the Social Sciences.* This book, by Eugene Webb et al., presents an insightful, highly readable introduction to unobtrusive measures and their application.
5. *Mirrors for Behavior: An Anthology of Classroom Observation Instruments,* edited by Anita Simon and W. Gil Boyer, contains reviews of 79 observation techniques, all of which are applicable to the classroom, even though a number of them were developed with other purposes in mind (such as counseling analysis). The book is published by: Research for Better Schools, Inc., 1700 N. Market Street, Philadelphia, Pennsylvania 19103.

Section Three

ANALYSIS AND INTERPRETATION OF DATA

9 Computers: Boons and Boondoggles

by

Ross Goodell and Allen Gruman

Computers are becoming common in the education field. They are used to schedule classes and keep books as well as to perform more exotic tasks such as computer-assisted instruction. However, computers are like airplanes: valuable when used properly, expensive and dangerous when misused. Just as there is little to fear in a carefully run airplane, there is little to fear from a well-organized computer system. Therefore, the intent of this chapter is to give you an overview of how computers can be well utilized, and to provide some indications of how to handle many of the common problems.

The decision to use a computer is based on sampling size and length of the research effort. Deciding to use machines instead of manual scoring also depends on the potential future utility of your findings. Should you need to expand on some interesting aspect of your work at some future time, this is no problem if computerization has occurred. Generally, familiarity with computers tends to encourage better, cost-effective computer usage.

It is important to remember that careful planning is essential to effective computer usage. The computer's capability to do things very quickly can be expensive if it is not doing the right thing. If a machine can do the work of a thousand men, it can also make the mistakes of a thousand men. With reasonably careful planning, however, even fairly small projects can effectively use computer assistance in evaluating their results.

This chapter will be useful in making decisions related to the inevitable confrontation with a computer center. Discussions include:

- The location of accessible computers
- Assistance from computer specialists
- Estimating computer costs
- Computer terminology
- Getting data into the computer
- Storing the master file

LOCATING A COMPUTER

Educational System Facilities

Very likely your project is located near a computer facility. If this is the case, there are innumerable advantages to using a readily accessible computer for your statistical evaluation. In some instances the computer time may be available at a reduced cost or no cost at all. Even if costs are the same as those for other data processing systems, familiarity will almost always save money and consequently reduce overall project expenses.

Renting Time on Other People's Computers

There are many computers which are not used 24 hours a day. Data processing time can be bought on such systems for reasonable fees. Many banks and colleges rent computer time in this way; local computer salesmen will often help potential users find computer time since such assistance may eventually lead to the sale of a larger computer. Negotiations for this type of computer time should stress adequate assistance, on-site storage facilities, reliable scheduling, and low cost. A programmer or systems analyst can also be helpful in selecting the data processing facility to be used.

Using Service Bureaus

Service bureaus are in the business of selling computer time. They offer supplies and operating services, and will often provide programmers. Service bureau programmers may require assistance with statistical operations, however, unless they have worked on other social science projects. It is important to consider how compatible a firm's capabilities are compared to your needs. Ideally, the system should be able to handle your processing problems based on experience handling data for other educational research programs. A list of service bureaus operating in your region can be found in the *Datamation Industry Directory*.

Using Time-Sharing Systems

Another kind of commercial data processing service available in most cities is time-sharing. In time-sharing, many people simultaneously use the same large computer. T
cates with the computer via a typewriter-l
attached to a telephone. The computer ma
away, but the user calls a local number.

Time-sharing offers convenient access
Programming on most time-sharing syste
by anyone with mathematical training.
time-sharing tends to be expensive, so
tempting in time-sharing—can be very co
kinds of teleprocessing terminals can be
Time-sharing salesmen will help you
terminals can be rented for about $70 a
charge of approximately $110.

If commercial service bureaus are under
be worthwhile to contact time-sharing c
large firms offer complete service bureau
time-sharing. Again, the *Datamation Indu*
if a service bureau offers time-sharing
Agreements with time-sharing companies
programming help and education. If yo
sharing, it would be wise to have the
programmer or systems analyst.

ASSISTANCE FROM COMPUTER

The costs of inefficiency in using a com
A capable data processing professional
though he may seem expensive. A compu
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should be available in case problems occu
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Datamatic Industry Directory.

When to Start Working with a Computer Sp

A clear statement of the information t
analysis to be performed should be formul
computer specialist. Before finalizing the
computer specialist should be consulted a

ATING A COMPUTER

cilities

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People's Computers

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in the business of selling computer time. d operating services, and will often provide bureau programmers may require assistance ions, however, unless they have worked on projects. It is important to consider how capabilities are compared to your needs. should be able to handle your processing perience handling data for other educational list of service bureaus operating in your the *Datamation Industry Directory*.

ystems

ommercial data processing service available in haring. In time-sharing, many people simultaneously use the same large computer. The customer communicates with the computer via a typewriter-like "terminal" which is attached to a telephone. The computer may be located many miles away, but the user calls a local number.

Time-sharing offers convenient access to a large computer. Programming on most time-sharing systems can be learned easily by anyone with mathematical training. On the other hand, time-sharing tends to be expensive, so learning as you go—tempting in time-sharing—can be very costly. Teletypes or other kinds of teleprocessing terminals can be just as easily located. Time-sharing salesmen will help you find one, or teletype terminals can be rented for about $70 a month plus a one-time charge of approximately $110.

If commercial service bureaus are under consideration, it would be worthwhile to contact time-sharing companies. Many of the large firms offer complete service bureau facilities in addition to time-sharing. Again, the *Datamation Industry Directory* indicates if a service bureau offers time-sharing by the listing "t-s." Agreements with time-sharing companies should strive for free programming help and education. If you are considering time-sharing, it would be wise to have the advice of a qualified programmer or systems analyst.

ASSISTANCE FROM COMPUTER SPECIALISTS

The costs of inefficiency in using a computer can be disastrous. A capable data processing professional can be a bargain even though he may seem expensive. A computer professional should be consulted in planning for computer usage and professional help should be available in case problems occur. An extensive list of data processing consultants and programmers can be found in the *Datamatic Industry Directory*.

When to Start Working with a Computer Specialist

A clear statement of the information to be gathered and the analysis to be performed should be formulated before contacting a computer specialist. Before finalizing the testing instrument, a computer specialist should be consulted along with a statistician

(or a person qualified in both fields). Their advice will only be as good as the information they receive. Most importantly, the overall processing plan should be outlined and documented in flowcharts before running the first computer program.

Selecting a Computer Specialist

A computer specialist may make errors which are as expensive as those of a novice. Choosing the wrong "expert" may be costly. Unfortunately, there is no easy way for a layman to pre-evaluate a computer expert. A student who is familiar with the computer to be used may do a good job at very low rates. A high-priced consultant, on the other hand, may pour out a constant stream of technical terms as well as big computer bills. Professional titles are not very helpful either, as a "programmer" may have more systems experience than a "systems analyst." People look for experience in a computer expert, but certain kinds of experience are more important than others. The following is a partial list of factors to bear in mind when looking for a computer specialist:

1. The computer specialist should be familiar with the computer you will be using. He may not have done exactly the same application before, but he should not have to spend your money familiarizing himself with the computer's eccentricities.

2. The computer specialist should have the proper level of experience. In designing an application, it is not wise to consult a person who has done only one kind of processing. Neither is it advisable to have simple programming done by an expensive consultant. Often, it is best to have the assistance of more than one consultant. The computer facility may provide systems consultation to your programmer.

3. The computer specialist cannot know everything. It is more important that he be willing to seek help when necessary than that he be an encyclopedia of computer information. A programmer should be comfortable with computers. But, if he suggests using someone else's program instead of writing a new one, it is a good sign. He should be more concerned with the project than with his processing guru.

4. The computer specialist should be a the people he is helping. He may jargon of drug education, but he himself understood.

5. The computer specialist should le specialist can follow. The unforese computer expert in the middle of a be unexpectedly extended. The co keep clear records of what he has should use standard techniques whi other professionals on other machine

6. The computer specialist should be will make mistakes, but he should c to prevent similar ones in the future.

The best guides available in choosing a the recommendations of other people fo He should have a history of satisfied client

ESTIMATING COMPUTER

Data processing costs must be estimate and in comparing data processing ser estimates are chronically low since more anticipated. Therefore, special care should all expenses are included in the estima processing to be done and a complete l prepared before seeking estimates. Quan important cost consideration. How many c For how long? What information will be What kind of exceptional cases can be expe original information will need correcting? ways is the data to be divided? How may on the data? Are there special problems confidentiality of subject identity?

in both fields). Their advice will only be as tion they receive. Most importantly, the n should be outlined and documented in ning the first computer program.

Specialist

ist may make errors which are as expensive Choosing the wrong "expert" may be costly. s no easy way for a layman to pre-evaluate a tudent who is familiar with the computer to ood job at very l. rates. A high-priced her hand, may pour o. t a constant stream of l as big computer bills. Professional titles are her, as a "programmer" may have more han a "systems analyst." People look for uter expert, but certain kinds of experience han others. The following is a partial list of d when looking for a computer specialist·

pecialist should be familiar with the com- e using. He may not have done exactly the n before, but he should not have to spend amiliarizing himself with the computer's

specialist should have the proper level of designing an application, it is not wise to who has done only one kind of processing. isable to have simple programming done by onsultant. Often, it is best to have the nore than one consultant. The computer vide systems consultation to your program-

pecialist cannot know everything. It is more he be willing to seek help when necessary n encyclopedia of computer information. A uld be comfortable with computers. But, if someone else's program instead of writing a good sign. He should be more concerned with the project than with his own image as a data processing guru.

4. The computer specialist should be able to communicate with the people he is helping. He may not know the technical jargon of drug education, but he should be able to make himself understood.
5. The computer specialist should leave a trail that another specialist can follow. The unforeseen can happen to your computer expert in the middle of a project, or a project may be unexpectedly extended. The computer specialist should keep clear records of what he has done. When possible, he should use standard techniques which can be duplicated by other professionals on other machines.
6. The computer specialist should be careful. A professional will make mistakes, but he should correct his errors and act to prevent similar ones in the future.

The best guides available in choosing a computer specialist are the recommendations of other people for whom he has worked. He should have a history of satisfied clients and employers.

ESTIMATING COMPUTER COSTS

Data processing costs must be estimated in preparing budgets and in comparing data processing services. Data processing estimates are chronically low since more problems arise than are anticipated. Therefore, special care should be taken to ensure that all expenses are included in the estimate. A clear outline of processing to be done and a complete list of input should be prepared before seeking estimates. Quantities are an especially important cost consideration. How many cases are to be studied? For how long? What information will be needed for each case? What kind of exceptional cases can be expected? How much of the original information will need correcting? How many different ways is the data to be divided? How may analyses are to be done on the data? Are there special problems to deal with, such as confidentiality of subject identity?

Components of Data Processing Cost

The cost of data processing includes many items other than computer costs. The computer cost amounts to less than one-half, more likely one-third, of the overall cost. Certain costs, such as space and air conditioning, usually are included in the charges for computer time. Other charges, such as operations and data storage, may not be included. Some data processors will bid on a whole project from input to final reports. Expenses may be broken into the following categories:

1. Data capture–Getting information from the measurement instrument into a form the machine can read economically. This cost will depend on the methods used and the amount of data to be captured.
2. Program preparation–Getting computer programs ready to process the data. Any programs to be written or modified must be prepared and tested to ensure reliable results before being used on your data. This can be expensive.
3. Data editing–Either by program or manually, the data must be checked and corrected. Data from various sources may have to be combined so that all the data on one subject is in one location.
4. Data storage–The data being analyzed must be kept in a convenient form for the computer to read. After the information has been analyzed, it should be stored in an inexpensive form–probably magnetic tape or punched cards–in case it should be needed again.
5. Data selection–The analysis most often involves breaking the data down in various ways for the application of statistical measures. This requires that selections be made from the primary file. The selections may be made by specially written programs, by the statistical programs, or by an interactive editing language. If the data are on punched cards, the selections may be made with a sorter or collator.
6. Statistical computation–Once the data has been prepared, the desired computations can be run. Canned statistical programs are usually available at no extra cost except for processing time and output requirem familiar with existing programs, mist expected.

Comparison of Charges

The main factors in computer use are t costs. By themselves, processing time cha charges, programmers' fees, and the brand are meaningless. Before examining the tota all anticipated expenses are included in th aware, however, that intangible factors costs. If one estimate includes free professi does not, add in an estimated charge for services. A higher price does not necessarily service. If, on the other hand, higher quality available, it is worth the higher rate.

Since estimates tend to be low, it wo additional method of estimating overall co cost estimates with costs for similar prog completed.

COMPUTER TERMINOL

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Field–A unit of space for holding on such as the subject's age.

Record–A collection of related field information for one subject.

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Comparison of Charges

The main factors in computer use are the results and the final costs. By themselves, processing time charges, input and output charges, programmers' fees, and the brand name of the computer are meaningless. Before examining the total cost, check to see that all anticipated expenses are included in the estimates received. Be aware, however, that intangible factors can greatly affect total costs. If one estimate includes free professional advice and another does not, add in an estimated charge for equivalent professional services. A higher price does not necessarily indicate higher quality service. If, on the other hand, higher quality service is known to be available, it is worth the higher rate.

Since estimates tend to be low, it would be wise to use an additional method of estimating overall costs, such as comparing cost estimates with costs for similar programs which have been completed.

COMPUTER TERMINOLOGY

Data processing, like any other technical discipline, has its own specialized language or jargon. The jargon may differ from one computer facility to another. When an answer to a simple question is incomprehensible, the culprit is often "jargon." Jargon, fortunately, can be learned quite quickly. Whenever a strange word appears, request a clarification. Many data processing texts, e.g., Davis (1965) and Sterling and Pollack (1965), contain glossaries of computer terminology. Following is a short list of essential data processing terms.

Field—A unit of space for holding one item of information, such as the subject's age.

Record—A collection of related fields, such as all of the information for one subject.

File—A collection of related records, such as all the results from a statistical instrument. Files are sometimes referred to as "data sets," although a file may consist of several smaller files while a data set usually does not.

Collate—The combining or merging of data, usually by matching on the basis of an identifier, such as a code number.

Input—Data put into a program or operation for processing. The input to a correlational program would be a file of responses to the statistical instrument and a small file of control cards which describe the processing to be performed.

Output—Data produced by a program or operation. The values printed by a correlation program would be output. If a program creates a new data file, this would also be output.

Punched cards—Cards on which information is coded via combinations of holes. Cards can be used for the storage of data; individual cards can be replaced whenever corrections are needed.

Paper tape—Tape on which information is coded via combinations of holes. May be reused repeatedly with the same data, but the data cannot be erased and replaced with new data.

Magnetic tape—Tape on which information is coded via magnetic fluctuations. May be reused by destroying previous information. May not have new information inserted or safely appended.

Magnetic disk—Magnetically sensitive disks on which information is coded via magnetic fluctuations. May have part or all of the information changed at any time. (There are other, less common devices with this capability, such as magnetic drums and data cells.)

Sequential access—Reading records one at a time in the order in which they were written. This is the only practical method for punched cards, paper tape, and magnetic tape. It may also be used for magnetic disks, drums and similar devices.

Direct access—Reading only the records needed in random order regardless of the order in which they were written. This is sometimes known as random acces and similar devices have this capab access devices. (The access meth reading records.)

Hardware—The physical machinery o units, the input and output device

Software—The programs provided wi for separately, which are available t capability.

Operating system—A complex program other programs running in a compu to those programs. On smaller comp be performed by a smaller program, may not be provided at all.

Decimal number system—The commor base of ten. One digit is used to rep Thus, the number 326 is 3 times 100 10 (2X10) plus six times one (6X1).

Binary number system—The number sy One digit is used to represent each po one times four (1X4) plus one tim times one (0X1). The binary syste computers, since it has only two correspond to the two possible se switch (on and off). Calculations produce the same answers as those that rounding produces slight differ have decimal arithmetic capabilities lem for commercial users. Scientific valid in either number system, and ar in binary.

Hexadecimal number system—The num of sixteen. One digit is used to re sixteen. Thus, 10 is one times sixte which is 16 in the decimal system. shorthand for binary arithmetic, sinc converted between hexadecimal and b

of related records, such as all the results from strument. Files are sometimes referred to as hough a file may consist of several smaller files usually does not.

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ding only the records needed in random order he order in which they were written. This is sometimes known as random access. Magnetic disks, drums, and similar devices have this capability and are called direct access devices. (The access method refers to writing and reading records.)

Hardware–The physical machinery of a computer: the logic units, the input and output devices, and the storage units.

Software–The programs provided with the computer or paid for separately, which are available to enhance the computer's capability.

Operating system–A complex program which controls all of the other programs running in a computer and provides services to those programs. On smaller computers, this function may be performed by a smaller program, known as a monitor, or may not be provided at all.

Decimal number system–The common number system with a base of ten. One digit is used to represent each power of 10. Thus, the number 326 is 3 times 100 (3X100) plus two times 10 (2X10) plus six times one (6X1).

Binary number system–The number system with a base of two. One digit is used to represent each power of two. Thus 110 is one times four (1X4) plus one times two (1X2) plus zero times one (0X1). The binary system is used by electronic computers, since it has only two digits, 1 and 0, which correspond to the two possible settings of an electronic switch (on and off). Calculations performed in binary produce the same answers as those done in decimal, except that rounding produces slight differences. Many computers have decimal arithmetic capabilities to overcome this problem for commercial users. Scientific calculations are equally valid in either number system, and are usually more efficient in binary.

Hexadecimal number system–The number system with a base of sixteen. One digit is used to represent each power of sixteen. Thus, 10 is one times sixteen plus zero times one, which is 16 in the decimal system. This is often used as a shorthand for binary arithmetic, since numbers can be easily converted between hexadecimal and binary but not between

decimal and binary. One hexadecimal digit corresponds to four binary digits.

Octal number base—The number system with a base of eight. One digit is used to represent each power of eight. Thus, 10 is one times eight plus zero times one, which is eight in the decimal system. Like hexadecimal numbers, octal numbers can be easily converted to binary numbers, and are, therefore, sometimes used as a shorthand for binary arithmetic. One octal digit corresponds to three binary digits.

GETTING DATA INTO THE COMPUTER

Ways That Computers Read Data

The information the computer is to process must be presented in a form which the machine can read. The following is a list of ways to prepare data for a computer to read:

Punching cards—The most common method is to punch the information into cards using a keypunch. Cards are easy to understand and work with, and the equipment and personnel are easy to find. Often keypunch operators are at the computer facility being used. Also, many temporary personnel agencies and service bureaus offer keypunch services. (See the *Datamation Industry Directory* services listings.)

Punching tape—Some smaller companies read punched tape instead of punched cards. Since the data are punched in a continuous stream instead of on replaceable cards, mistakes are more difficult to correct. Editing programs may be used to correct the data after the computer has read it. If a time-sharing system is used from a telegraph terminal, costs can be kept down by punching the data into tapes while the terminal is not connected to the computer. (This is also true for terminals equipped with magnetic cassettes, cartridges, or disks.)

Keying magnetic tape—Some computer facilities use devices for keying data directly onto magnetic tape or other magnetic media. The devices usually have editing capabilities.

Direct entry—A few large facilities hav data directly into the computer. Ext ties are provided. This method ma time-sharing systems but to keep cos avoided for large quantities of data.

Interactive program—A program which r user while the program is running (as c control information and data and without interruption).

Electronically or optically scanning mark equipped to read answers on a special by a pencil. A program may be needed a standard form.

Manually punching cards—Using specia inexpensive equipment, subjects tion directly into cards. This met many voting precincts. A program ma the data to a standard form, and the must be able to handle this type of car

Optically scanning hand printing—Some ped to read hand printed characters. required, and subjects must be instru printing.

The best method for feeding informat depends on the equipment available and th larger amounts of data, minimizing the m should reduce costs and increase reliabili between subject and computer can be elim the last three methods listed. The equipm methods is more expensive and harder to fi is usually more economical than keypun methods is to be used, the answer form sh computer before being used by subjects.

Whatever method is used, the informat more readable form after the computer firs the first program may read the responses f

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The number system with a base of eight. represent each power of eight. Thus, 10 is us zero times one, which is eight in the ike hexadecimal numbers, octal numbers erted to binary numbers, and are, there- ed as a shorthand for binary arithmetic. esponds to three binary digits.

ATA INTO THE COMPUTER

ead Data

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e—Some computer facilities use devices for ly onto magnetic tape or otner magnetic usually have editing capabilities.

Direct entry—A few large facilities have terminals for keying data directly into the computer. Extensive editing capabilities are provided. This method may also be used with time-sharing systems but to keep costs down, it should be avoided for large quantities of data.

Interactive program—A program which requests input from the user while the program is running (as opposed to inputting all control information and data and running the program without interruption).

Electronically or optically scanning marks—Some computers are equipped to read answers on a special sheet, perhaps marked by a pencil. A program may be needed to convert the data to a standard form.

Manually punching cards—Using special cards and relatively inexpensive equipment, subjects can punch information directly into cards. This method is now used in many voting precincts. A program may be needed to convert the data to a standard form, and the computer's card reader must be able to handle this type of card.

Optically scanning hand printing—Some computers are equipped to read hand printed characters. A special form may be required, and subjects must be instructed on how to do the printing.

The best method for feeding information into the computer depends on the equipment available and the amount of data. For larger amounts of data, minimizing the manual work to be done should reduce costs and increase reliability. Ideally, translation between subject and computer can be eliminated by using one of the last three methods listed. The equipment for the last three methods is more expensive and harder to find, but when available, is usually more economical than keypunching. If one of these methods is to be used, the answer form should be tested with the computer before being used by subjects.

Whatever method is used, the information may be stored in a more readable form after the computer first reads it. For instance, the first program may read the responses from punched cards and

save them on magnetic tape, which is less expensive and quicker to read.

The Form of the Instrument

The method with which the data are to be prepared for the computer should be considered when designing the statistical instrument. If a separate answer sheet is to be used, it must be reasonably laid out for the coder, keypuncher, or machine scanner. Even if the answers are to be marked on the question sheet, the method of scoring should be clear and easily coded. The convenience of the subject, however, is also important. If the subjects are confused by the directions or the format, they may mark their answers incorrectly, invalidating the statistical analysis.

The statistical analyses to be performed should also be considered when designing the instrument. The information from an instrument can often be coded directly employing "canned" statistical programs. Programs can be written to rearrange the information before it is analyzed, but writing and testing such programs is expensive. Whenever possible, both the statistician and the computer specialist should be consulted before finalizing the instrument.

Identifying the Cases

When the instrument is administered more than once to the same subjects, or if information must be gathered from more than one source, a means of uniquely identifying the cases must be devised. If there is no question of confidentiality, names can be used. Where secrecy is essential, the means of identifying the cases must not compromise the anonymity of the subjects.

If all the information can be gathered at one time, as in a cross-sectional survey, the cases can be identified simply by assigning random numbers. (Most statistics texts or books on general mathematics contain tables of random numbers. Any orderly selection of numbers from such a table will produce a sequence of random numbers.) All records (e.g., punched cards) containing information on a single case should be identified by the same random number. Each record for that case should have a code uniquely identifying what kind of record it is.

If the information is gathered at diff
together, as in a longitudinal survey, anot
The method used in the Stanford Un
Study (Chapter 6) was to assign the same
administration of the instrument and to
computer file containing each subject's
random number. These identifying ran
bedded within an expanded set of dig
meaningful information. Programs referr
collate the various data by subject. The
such a computer file should be securit
number. The computer file is destroye
complete.

Coding the Data

If the instrument is laid out so that th
transcribed to machine readable medi
avoided. For instance, if code number
marked, they can be instantly distinguish
and answers can be punched directly ont
coding step is usually needed, however,
translation is required.

Should coding be required, a coding fo
can be keyed is needed. A typist usi
employed for coding to eliminate later k
efficient but may be expensive. Coding is
done by students or other staff perso
describing what it is to be coded colum
provided for the coders so that there will
directions they receive. An example
follows:

Card Columns	Format	Conte
1	"A"	Enter that instru
2	n	Enter admin

tic tape, which is less expensive and quicker to

trument

which the data are to be prepared for the
e considered when designing the statistical
arate answer sheet is to be used, it must be
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s contain tables of random numbers. Any
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n numbers.) All records (e.g., punched cards)
ion on a single case should be identified by the
ber. Each record for that case should have a
ifying what kind of record it is.

If the information is gathered at different times and collated together, as in a longitudinal survey, another method may be used. The method used in the Stanford University Drug Evaluation Study (Chapter 6) was to assign the same random number on each administration of the instrument and to keep a carefully guarded computer file containing each subject's name together with the random number. These identifying random numbers were imbedded within an expanded set of digits containing additional meaningful information. Programs referring to this file may then collate the various data by subject. The people having access to such a computer file should be security conscious and few in number. The computer file is destroyed when the collation is complete.

Coding the Data

If the instrument is laid out so that the answers can be directly transcribed to machine readable media, hand coding can be avoided. For instance, if code numbers or letters are clearly marked, they can be instantly distinguished from extraneous data and answers can be punched directly onto cards. An intermediate coding step is usually needed, however, if any interpretation or translation is required.

Should coding be required, a coding form from which the data can be keyed is needed. A typist using a terminal may be employed for coding to eliminate later keying. This approach is efficient but may be expensive. Coding is easily learned and can be done by students or other staff personnel. A "coding book" describing what it is to be coded column by column should be provided for the coders so that there will be no confusion in the directions they receive. An example of coding instructions follows:

Card Columns	Format	Contents
1	"A"	Enter the letter "A", indicating that this card contains data from instrument A.
2	n	Enter the contact number for this administration of instrument A.

3	"1"	Enter the number "1", indicating that this is the first of the two cards for this subject.
4–10	nnnnnnn	Enter the seven digit random number assigned to this subject.
11	n	Enter the code for the subject's school from the following table: 1–George Washington Elementary 2–Thomas Jefferson Elementary 3–Andrew Jackson Elementary 4–Abraham Lincoln Junior High . . . . (etc.)
12–13	nn	Enter the subject's grade, e.g., "09" for ninth grade, "10" for tenth grade.
14	A	Enter the subject's class section (the "A", "B", or "C" marked on the front of the form).
15	n	Enter the number of the answer selected by this subject for question 1. If no answer was given, enter a zero.
. . .	. . .	. . . (etc.)

Verifying the Data

The first lesson that a computer teaches is that mistakes occur. All manual operations must be verified or checked if results are to be taken as reliable.

Verification by sight checking, although often used, is of limited value. The sight checker may overlook mistakes that the computer will not. It is better to duplicate the operation, preferably using a different person, and investigate all disagreements. Card verifying machines which work like key-punches, check the information already punched on the cards by the keypunch. If a person must verify his own work, there should be a time lapse between the two efforts.

STORING THE MASTER FILE

Dangers–Detected Harm

Here are some ways to destroy data or have it destroyed for you:

1. Erase it when you are finished with
you were not really finished.
2. Put more information on top of it. Co
one item of information in one place a
people try to tell their computer othe
3. Leave it where someone else may deci
4. Mix it up. Drop several thousand
uniquely coded so that they cannot be
5. Damage it. Drop several carefully code

In short, the possibility of losing a
eliminated. Making sure there is a way to re
is vital to successful computer use. This ca
copies or backups of data files which can b
are destroyed. For instance, if punched c
magnetic tape for more economical process
can be kept in a different location to mi
total loss. Clear records, preferably actual
be kept to facilitate recovery.

How much backup should be kept is a
Generally, the original input material shou
that no error is irrecoverable. Backups ought
enough that recovery can be made without
other hand, backups ought not to be made s
cost more than returning to original data.

Dangers–Undetected Harm

Even though computers are capable
sophisticated calculations, there are possib
may be incorrect. Here are some of the wa
not even know it:

1. Lose the last part of the data. The c
most of the way, but something went
of the data was written out. You did
the computer tried to tell you abou
notice that the last record out did not
record you put in. Everything is

"1"	Enter the number "1", indicating that this is the first of the two cards for this subject.
nnnnnnn	Enter the seven digit random number assigned to this subject.
n	Enter the code for the subject's school from the following table: 1–George Washington Elementary 2–Thomas Jefferson Elementary 3–Andrew Jackson Elementary 4–Abraham Lincoln Junior High . . . . (etc.)
nn	Enter the subject's grade, e.g., "09" for ninth grade, "10" for tenth grade.
A	Enter the subject's class section (the "A", "B", or "C" marked on the front of the form).
n	Enter the number of the answer selected by this subject for question 1. If no answer was given, enter a zero.
. . .	. . . (etc.)

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nt checker may overlook mistakes that the
t is better to duplicate the operation,
fferent person, and investigate all disagree-
machines which work like key-punches,
n already punched on the cards by the
must verify his own work, there should be a
two efforts.

RING THE MASTER FILE

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s to destroy data or have it destroyed for

1. Erase it when you are finished with it. Then you discover you were not really finished.
2. Put more information on top of it. Computers can keep only one item of information in one place at one time. Sometimes people try to tell their computer otherwise.
3. Leave it where someone else may decide to put his data.
4. Mix it up. Drop several thousand cards which are not uniquely coded so that they cannot be put back together.
5. Damage it. Drop several carefully coded cards in a puddle.

In short, the possibility of losing a data file cannot be eliminated. Making sure there is a way to recover from such a loss is vital to successful computer use. This can be done by keeping copies or backups of data files which can be used if the originals are destroyed. For instance, if punched card data is placed on magnetic tape for more economical processing, the original cards can be kept in a different location to minimize the chances of total loss. Clear records, preferably actual program input, should be kept to facilitate recovery.

How much backup should be kept is an economic question. Generally, the original input material should be saved to ensure that no error is irrecoverable. Backups ought to be made frequently enough that recovery can be made without great expense. On the other hand, backups ought not to be made so frequently that they cost more than returning to original data.

Dangers–Undetected Harm

Even though computers are capable of producing highly sophisticated calculations, there are possibilities that the results may be incorrect. Here are some of the ways to ruin results and not even know it:

1. Lose the last part of the data. The computer program ran most of the way, but something went wrong before the last of the data was written out. You did not understand when the computer tried to tell you about it, and you did not notice that the last record out did not correspond to the last record you put in. Everything is fine after that until

someone reviewing the analysis asks why only sixty percent of the cases were included.

2. Lose the first part of the data. You remember to check the last record out, but you forgot to feed in your first deck of cards.
3. Lose the middle of the data. You check the first and last records, but you missed one of the card boxes in the middle.
4. Lose a portion of the data. You count the records in and out of the program, but the coder misunderstood your directions and one question was not coded for any of the cases.
5. Lose some data every once-in-a-while. You count the records in. You count the records out. But the program has a mistake which causes it to throw out the last five characters in every third record.
6. Include some extra data. You do not make any mistakes, but someone accidentally uses your space instead of his and adds forty records to the end of your data.

Many people accustomed to hand calculation methods are apprehensive about having computers process information for them. The computer is not more likely to make mistakes, but the person calculating by hand will check so much of his data that he has a good chance of spotting and correcting mistakes as he goes along. To be certain of computer results, one must make the same external checks that would be done with any manual system. The computer can never be trusted to miraculously produce correct answers when the user is not sure of what he is doing.

Damage to data or confusion in using a program can usually be spotted by employing some simple checks:

1. If a program is written to process the data, it should include logic to check the input data for reasonableness. For instance, names should not have numbers in them. Student's ages should not have letters and should be reasonable for the grades they are in. All questions should be answered. It may be desirable to have coders indicate an unanswered item with something like a zero to indicate that the item was not overlooked in coding or keying.
2. Counts should be kept of all rec
out of programs. Many available
programs, keep record counts wh
the user's counts.
3. If possible, fields to be included i
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RECOMMENDATIONS AND

Keep It Simple—and Standard

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2. Counts should be kept of all records going into or coming out of programs. Many available programs, such as sorting programs, keep record counts which can be checked against the user's counts.
3. If possible, fields to be included in computations should be totaled across all records whenever they are worked with. For instance, if items A and B are to be summed for each record, the total of all item A's plus the total of item B's should equal the total of A+B sums. Similarly, the next program to process the same records should calculate the same totals. (It is possible for two or more offsetting errors to accidentally cause a correct total. The chances of this happening for a field with a reasonable amount of variability, however, are quite small.) If the totals disagree, check the data until the error or errors causing the discrepancies are located and corrected. If many errors are found, the checker should inspect all of the records, instead of depending on the totals. This kind of total is known as a control total.
4. Even if a total has no meaning, as in totaling all of the ages of the subjects, the total may still be used to check for a disagreement in one of the individual items. Balancing totals, for instance, may be kept on the subjects' ages.

RECOMMENDATIONS AND SUMMARY

Keep It Simple—and Standard

There is a well known principle among data processing people known as the "KISS" principle. It is usually defined as Keep It Simple Stupid, a reminder to the data processor that trouble usually comes when he is trying to be fancy. Even when a tricky ploy works, it can be very confusing to anyone trying to reconstruct what has been done. There are innumerable problems which can occur unexpectedly and require the reconstruction of earlier work. Wherever possible, processing should be kept straightforward and clearly documented.

It is also wise to do the processing in as conventional a manner as possible. Some of the work may have to be done by a new person who is unfamiliar with his predecessor's idiosyncratic ways. Or, some of the work may have to be done at a different computer facility which does not have the same capabilities as the original facility. For instance, a newly developed program for copying files to tape at the X computer facility may create a tape which would be impossible to read at the Y computer facility. It is preferable to use standard data processing techniques and programs, and generally cheaper in the long run to Keep It Simple and Standard.

In summary, there are fundamental principles which underlie all quantitative sociometric data:

- The analysis must be designed first, the data collected second. Often one hears statements like: "We'll just go and collect some data, then get a statistician to analyze it." This approach guarantees failure. It is essential to know *exactly* what data are required and what hypotheses are to be tested *ahead of time*. Reliance on canned statistical computer programs to determine data, form and content is dangerous. The capabilities of such programs are seldom relevant to the important issues of evaluation.
- The easiest way to approach program analysis is by asking questions which become progressively more explicit. Examples. "What is the program trying to do?" "What is a suitable direct or indirect measure of drug abuse or use?" "How can this measure be taken by survey, from records, etc.?" "What is the relation of the sample to the total target population (of the education program)?" "Is it possible to design a sample to eliminate the effects of background variation and of temporal changes in the target population?" "What statistical analys using the raw measured data to overco ness, bias, retrospective focus, etc.?"

There are no simple answers to any of the all in blind reliance on "data processing." Co operations researchers, etc., *may* be useful, b success. Their possible ignorance of both edu be both a problem and an advantage. It can p require constant guidance and education. How of drug education can also confer an uncl analytical problem—they could be able to pe ities rather than detailed differences visible t expert.

Most important of all is that the analysis be too ambitious, to answer *all* questions. A issue which can be thoroughly analyzed often actual impact of a program than does a gr executed conception. Small certainties resultin are always worth more than large speculations.

Computers are time saving tools. Like all used properly. When they are misused they waste. There is nothing magical about data p computer does is extremely simple and easy work must, therefore, be carefully planned in introductions to data processing emphasize gives back only what it is told to do. If com trusted, the computer must be carefully mo the user must see that correct data are given t the appropriate calculations are specified, and

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There are no simple answers to any of these questions, least of all in blind reliance on "data processing." Consulting statisticians, operations researchers, etc., *may* be useful, but is no guarantee of success. Their possible ignorance of both education and drugs can be both a problem and an advantage. It can pose problems if they require constant guidance and education. However, their ignorance of drug education can also confer an uncluttered view of the analytical problem—they could be able to perceive broad similarities rather than detailed differences visible to the drug education expert.

Most important of all is that the analysis must not attempt to be too ambitious, to answer *all* questions. A small, well-defined issue which can be thoroughly analyzed often tells more about the actual impact of a program than does a grandiose but poorly executed conception. Small certainties resulting from careful work are always worth more than large speculations.

Computers are time saving tools. Like all tools they must be used properly. When they are misused they can be an expensive waste. There is nothing magical about data processing. What the computer does is extremely simple and easy to understand. Any work must, therefore, be carefully planned in advance. This is why introductions to data processing emphasize that the computer gives back only what it is told to do. If computations are to be trusted, the computer must be carefully monitored. Essentially, the user must see that correct data are given to the computer, that the appropriate calculations are specified, and the results verified.

10 Consumer Feedback: Student Evaluation Results

by

L. Annette Abrams

This chapter is preceded by discussions of drug education evaluation from a number of different perspectives. It seems appropriate at this point to shift our focus to the question of student involvement in drug-related research.

The latest shibboleth in the drug prevention arena is "peer involvement." Many strategies involving youth, school programs and drug solutions are focused on peer-oriented solutions to drug abuse: labels such as peer pressure—pear group leadership—peer acceptance—peer rejection—peer influence, abound. Unfortunately, adults possess a minimal working knowledge of the peer emphasis to which they so frequently refer.

This chapter, therefore, is intended to discuss student research as a method of gaining peer group feedback about school drug education programs. Beginning with an overview of student involvement in drug education, the chapter will address many issues which perplex well-meaning school planners and educators. Student research findings are documented and the implications for drug education are discussed. Case studies of four student research projects, sample student questionnaires and survey instruments are included in Appendices B and C at the end of this chapter.

DEFINING STUDENT INVOLVEMENT

Along with the search for effective prevention programs has emerged an interest in student research programs focused on drug use among their peers. The concept of students as planners and evaluators is far from innovative; this idea has long been of interest to educators and administrators. Student councils, junior boards of education and summer internship programs, to name a few, have functioned as student involvement vehicles for decades. Because of inherent institutional limitations, however, these bodies exist primarily for the purpose of providing information to adults in positions of authority regarding minor school affairs. Rarely, if ever, are student "legislators" actually involved in serious policy issues. This situation occurs primarily because such involvement overturns a traditional assumption that adults, "knowing what's best for students," have a monopoly on the knowledge needed to solve problems and make responsible decisions.

Regardless of the attitudes held by many educators, it appears that drug use has catalyzed the adoption of student involvement efforts as an alternative to traditional drug education programs which have failed to change behavior. In this regard (i.e., measuring program "success" and "failure") student opinion is becoming a central factor in determining the efficacy of drug education programs. Another important, yet often disregarded criterion for measuring program impact, as its responsiveness to student needs. As will be discussed later in this chapter, some drug education programs have begun to address directly the needs of youth. These programs have discovered that a truly accurate picture of student needs can come only from the students themselves.

STUDENTS AND DRUG PROGRAMS

Although there has been an *interest* in surveying student opinion as a part of program evaluation, *acceptance* of student-controlled drug research activities is far from widespread. An initial step toward serious student involvement in drug programs occurred when, in 1970, the U.S. Office of Education (USOE) designed funding guidelines for its school/community drug education programs. Of primary concern to USOE was that school personnel build and maintain bridges of communication between adults and student program consumers. The agency, for example, supported planning procedures which encouraged institutions to maintain working relationships with students. All too often, it seemed, drug education programs which were intended to benefit students were functioning, instead, on the basis of *perceived* student needs, having few desirable effects on student drug use behavior.

In the years since 1970, the Office of Education has catalyzed, by its example, a growing interest in seeking student guidance in planning programs and, more recently, in evaluating school programs. Funding from USOE has also paved the way, attitudinally, for educational institutions to accept student opinions and willingly utilize the recommendations of their youthful clientele.

In 1971 another organization, the National Education Association (NEA), recommended to its membership that "... students be involved in evaluating (drug) programs and teams in the approval of drug materials ... students involved and to break down barrie NEA's Student Involvement Task Force sir establishment of a study project on drug e composed of equal numbers of students would work and recommend programs to ot

These examples of an early emphasis on led to the emergence of student-controlled drug research projects intended to enhance a youthful needs, intentions and opinions relate

LEVELS OF STUDENT INVOLV

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be involved in evaluating (drug) programs and . . . act as evaluation teams in the approval of drug materials . . . as a means of getting students involved and to break down barriers." That same year NEA's Student Involvement Task Force similarly suggested the establishment of a study project on drug education " . . . to be composed of equal numbers of students and teachers, which would work and recommend programs to other public agencies."

These examples of an early emphasis on student involvement led to the emergence of student-controlled and student-designed drug research projects intended to enhance adult understanding of youthful needs, intentions and opinions related to drugs.

LEVELS OF STUDENT INVOLVEMENT

In order to achieve effective, active student involvement, those specifying student cooperation and involvement as a program objective must understand the varying levels of student participation. On a continuum defining student activity from "active" to "passive," most educational institutions are located at the passive extreme: confused about workable methods for motivating students to cooperate with school authorities. Consequently, students are relegated to essentially passive roles. These inactive situations usually begin with a well-intentioned plan for implementation of a "student-run" research program; written ideas are usually commendable, however, they reflect only adult perceptions of the student's role. Programs characterized as having defined passive student roles rarely place students in functional leadership positions. Programs fitting this description should examine carefully their failure to motivate students and/or to relinquish some degree of control.

Midway on the continuum are the programs which succeed at adding student members to planning committees, instituting programs staffed by students, and the like. In such situations, students are semi-active and rarely autonomous, usually having rigid adult supervision. Regardless of their physical presence, students are outnumbered or outranked; they end up speaking in a whisper among the thundering declarations of adults. For such

programs to succeed, young people require the support mechanisms and trust available to teachers or administrators in the same circumstances. School authorities must decide before inviting student participation whether or not they prepared to go along with the student suggestions and criticisms which may follow. Educators who invite student feedback must be prepared to act and accept it, or at least give it serious consideration.

An active level of student involvement in planning and evaluation possibly offers the greatest potential for improving program quality. Administrators for active student programs are prepared to listen, discuss and compromise. Students are afforded positions of equality; their opinions carry weight and so do their votes. The end result of such efforts promises learning experiences for both students and adults.

STUDENT RESEARCH PROGRAM MODELS

Having described briefly the reciprocal advantages of active student involvement, it is helpful to discuss specific programs which have manifested their ability to achieve student/adult cooperation in drug research. Following are descriptions of two student research projects, one national in scope and the other with a local emphasis. These projects placed junior and senior high school-aged youths in leadership roles, working with adult advisors. Each effort encouraged youthful representatives to offer recommendations regarding possible activities and resources which would ameliorate school and community drug problems as defined by their peers.

High School Student Research Project

In response to the dearth of firsthand "consumer feedback" about current school prevention efforts, The Drug Abuse Council, Inc. provided research grants of $2500 to nine high school student research teams from across the country.[25] Outreach was accomplished by disseminating a descriptive, but not elaborate, brochure in August 1972. Brochures were nat number of student council representatives were contacted by the High School Stu (SIC), a student-run consultant service cr and women helping other students to schools. The brochure explained the r student research projects, suggested vario and provided specifications for those stu proposals for funding.

The student groups selected conducte tions of the drug scene in their schools a also examined drug education programs mendations for modifications and new recommendations and a structured inf curred during the High School Stude Washington, D.C. in February 1973. T Research Project proved to be a succes authority remained in the hands of possible; projects received funds through Center which functioned as their fiscal age

Action Priorities, Inc.

ACTION is an experimental project co- tion Services Agency, the New York City the Bristol-Myers Product Division. The AC since 1970, is intended to involve hi identifying and experimenting with innov prevention approaches. Fiscal control is i coordinating and planning staff, but the yo research and design drug education reso peers.

The 1973 ACTION program involved public school teams who:

- Developed peer-oriented questionn
- Solicited information needed to drug problems they would tackl might be successful

[25] Teams were selected from. Hollywood, Florida; El Paso, Texas; St. Louis, Missouri; Madison, Wisconsin, Boston, Massachusetts, Washington, D.C., New York City; San Francisco, California; and Dayton, Ohio.

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in August 1972. Brochures were nationally distributed to a number of student council representatives. Other potential grantees were contacted by the High School Student Information Center (SIC), a student-run consultant service created by high school men and women helping other students to affect change in their schools. The brochure explained the rationale for drug-related student research projects, suggested various areas of investigation, and provided specifications for those students wishing to develop proposals for funding.

The student groups selected conducted three-month investigations of the drug scene in their schools and communities. Groups also examined drug education programs and formulated recommendations for modifications and new approaches. Summary recommendations and a structured information- exchange occurred during the High School Student Conference held in Washington, D.C. in February 1973. The High School Student Research Project proved to be a successful pilot project. Fiscal authority remained in the hands of young people whenever possible, projects received funds through the Student Information Center which functioned as their fiscal agent.

Action Priorities, Inc.

ACTION is an experimental project co-sponsored by the Addiction Services Agency, the New York City Board of Education and the Bristol-Myers Product Division. The ACTION effort, operational since 1970, is intended to involve high school students in identifying and experimenting with innovative, peer-oriented drug prevention approaches. Fiscal control is in the hands of an adult coordinating and planning staff, but the youths themselves conduct research and design drug education resources relevant to their peers.

The 1973 ACTION program involved twenty New York City public school teams who:

- Developed peer-oriented questionnaires
- Solicited information needed to identify specific school drug problems they would tackle and approaches that might be successful

- During role play interview situations, they formulated peer-oriented questions, thus developing their interview skills and leadership abilities
- Having identified the problem to be dealt with, student teams decided what programs, materials or services would most effectively combat it
- Following product development, teams developed a plan for product use and evaluation

ACTION emphasizes direct youth involvement in determining the program's method and objectives.

ACTION is based on the premise that projects involving youth talking to other youth, using the language and value systems of youth, will prove demonstrably more effective in drug prevention than approaches being tried elsewhere. To accomplish its aims, ACTION teams are selected from Harlem schools as well as more affluent schools in Nassau County. According to the project director, Charles Schwep, "... the project succeeded in motivating young people to conceive, develop and implement effective anti-drug programs. ACTION not only created peer group involvement, but led to community involvement in combatting drug use among young people. It proved that youth-directed communications can be more effective than many existing programs (which depend solely on adult leadership and creativity)."

An important benefit of the ACTION program is its potential replicability. Other secondary schools desiring guidance in conducting student research and training can, for example, obtain "Action Kits" and training manuals which describe the project's structure and content. Materials are available from Charles F. Schwep, Career Previews, Inc., Studio 847, Carnegie Recital Hall, 154 West 57th Street, New York, New York 10019.

THE UNIQUENESS OF STUDENT RESEARCH FINDINGS

Any discussion of student research findings must begin by acknowledging that many educators ignore the value of student research for the teaching-learning process. Although education is reportedly advancing toward less rigid learning relationships, noticable vestiges of extremely authoritative interaction remains at all levels. Many conte ity-orientation" limits education to a "banki teachers (the authorities) deposit a wealth o in the minds of their students (the subordi progressive educators criticize this "autho various reasons, some of which relate dire failure of "traditional" drug education centered learning:

- By its very nature inhibits the develop learners;[26]
- All too often defines "relevant infor basis of what is already known, opportunity for consumers to provide individual learning needs. "Relevant fined by school authorities rarely societal influences which serve to m meaning and worth of education for the area of drug education.

School authorities interviewed by students "authority-orientation" in their attitudes, p toward drug use. For example, schools consis to the existence of student drug use. Stud administrators for displaying, in unrealistic po ments, a "pseudo-innocence" about drug use structive communication and honest investig drug-related problems. Additionally, rese administrators were unwilling to explain cooperate with students in arranging inter school authorities obstructed student inqui to reveal the actual existence of school drug p

[26] Michael Rossman, in his book *On Learning and Social* autonomous learner as someone who: "... knows how identify relevant resources that are available in his enviro create procedures and evaluate his results, has the ability to learning, has the ability to know what he wants (or needs interact with others to help learn these skills, (and) out o useful knowledge ... he directs himself."

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noticable vestiges of extremely authoritative administrator-student interaction remains at all levels. Many contend that this "authority-orientation" limits education to a "banking concept" wherein teachers (the authorities) deposit a wealth of factual information in the minds of their students (the subordinates). Students and progressive educators criticize this "authority-orientation" for various reasons, some of which relate directly to the repeated failure of "traditional" drug education courses. Authority-centered learning:

- By its very nature inhibits the development of autonomous learners;[26]
- All too often defines "relevant information" solely on the basis of what is already known, thus eliminating the opportunity for consumers to provide input regarding their individual learning needs. "Relevant information" as defined by school authorities rarely reflects the broader societal influences which serve to modify or enhance the meaning and worth of education for students, especially in the area of drug education.

School authorities interviewed by students reportedly exhibit this "authority-orientation" in their attitudes, programs and policies toward drug use. For example, schools consistently failed to admit to the existence of student drug use. Students criticized school administrators for displaying, in unrealistic policies and pronouncements, a "pseudo-innocence" about drug use which precluded constructive communication and honest investigation of the school's drug-related problems. Additionally, research teams reported administrators were unwilling to explain school policies or to cooperate with students in arranging interviews. Consequently, school authorities obstructed student inquiries which threatened to reveal the actual existence of school drug problems.

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[26] Michael Rossman, in his book *On Learning and Social Change*, succinctly defines an autonomous learner as someone who: ". . . knows how to formulate problems, can identify relevant resources that are available in his environment, is able to choose or create procedures and evaluate his results, has the ability to see clearly the *process* of his learning, has the ability to know what he wants (or needs) to learn, has the ability to interact with others to help learn these skills, (and) out of all this he is able to create useful knowledge . . . he directs himself."

Administrative adherence to an authority-orientation often prohibits consideration of new ideas and suggestions concerning how these ideas can and should be tested. In many instances, students experienced frustration because they lacked the administrative support necessary to deal responsibly with the drug problems reported by their peers. For instance, students reported that schools should develop the capability to make medical referrals in the case of drug emergencies. Nevertheless, without administrative sensitivity to the need for hotline services, students themselves are unable to translate their recommendations into action.

School personnel should not take the view that student research is a threat or a challenge to their authority. On the contrary, educational institutions have an ever-increasing responsibility to seek and utilize any information which addresses the conduct of drug education, particularly that provided by the consumer.

DRUG EDUCATION CLASSES AND CURRICULA

Despite their failure to confront the existence of drug use in their own schools, many educators and administrators instituted mandatory drug education courses (usually because state laws required preventive education for every student through high school graduation). Regrettably, the quality of drug education, in most instances, reflected limited information about drug use and drug users. Drug curricula were predominately based on information alone; educators frequently relied solely on unsatisfactory drug education films. The Metro High School team from St. Louis, Missouri examined drug curricula in several of the city's secondary schools. Their conclusions were indicative of other student reports about the quality of drug education courses:

> The content of the drug education component in this single course is comprised only of one movie on cigarette smoking, one movie on alcoholism and finally, one movie that covers marijuana and narcotics. This last movie, on marijuana and narcotics, was declared non-factual by the federal government. However, this film remains the sole "educational" exposure to marijuana and narcotics for all students in the St. Louis public high schools.

A number of schools reportedly utili approaches which were offered as a courses. While, in a few exceptional affective education programs which pla on drug information. These latter c student evaluators for concentrating o their needs, often focusing on the indi escape behavior.

Students recommended that schools courses initiate curricular planning and collaboration with students, parents an people. Minimally, all school curricul information about the psychological an This recommendation was accompanied contrary to public attitudes, will not suc experimentation and use of illegal drugs. tion" goal would seek to arrest non-des

Students further encouraged educat better drug education approaches, e school-aged children and adults—the gr most uninformed about drugs. Informa grams for children, students believed, hav some degree of drug use. Along this li wood, Florida, upon completion of thei a "Big Brother" program to provide e non-drug-using role models. These high and sisters hope to share experiences panions such as sports, counseling, tri counseling plans align with a broader re exposed to drug information, both youth in intergenerational discussions about 1 their lives; 2) responsible roles for drugs drugs); and 3) the necessary distinctio between drug *use* and drug *misuse*.

Distinguishing between use and misus requires decisions about policy, progra educational institution vis-à-vis the han Students offered no "solutions" to t emphasized the need to confront this qu

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CATION CLASSES AND CURRICULA

lure to confront the existence of drug use in
many educators and administrators instituted
ducation courses (usually because state laws
e education for every student through high
Regrettably, the quality of drug education, in
lected limited information about drug use and
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s frequently relied solely on unsatisfactory drug
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clusions were indicative of other student reports
f drug education courses:

> the drug education component in this single course is
> of one movie on cigarette smoking, one movie on
> inally, one movie that covers marijuana and narcotics
> on marijuana and narcotics, was declared non factual
> government. However, this film remains the sole
> xposure to marijuana and narcotics for all students in
> olic high schools.

A number of schools reportedly utilize traditional information approaches which were offered as a part of health education courses. While, in a few exceptional cases, schools supported affective education programs which placed a secondary emphasis on drug information. These latter courses were heralded by student evaluators for concentrating on individual students and their needs; often focusing on the individual's need to manifest escape behavior.

Students recommended that schools which lack drug education courses initiate curricular planning and development activities in collaboration with students, parents and experienced community people. Minimally, all school curricula should include honest information about the psychological and physical effects of drugs. This recommendation was accompanied by a caveat that schools, contrary to public attitudes, will not succeed in preventing student experimentation and use of illegal drugs. A more realistic "prevention" goal would seek to arrest non-destructive student drug use.

Students further encouraged educators to continue seeking better drug education approaches, especially for elementary school-aged children and adults—the groups surveys proved to be most uninformed about drugs. Information and education programs for children, students believed, have the potential to prevent some degree of drug use. Along this line, students from Hollywood, Florida, upon completion of their research report, initiated a "Big Brother" program to provide elementary children with non-drug-using role models. These high school-aged big brothers and sisters hope to share experiences with their younger companions such as sports, counseling, trips, tutoring, etc. Their counseling plans align with a broader recommendation that those exposed to drug information, both youth and adults, be involved in intergenerational discussions about 1) the role drugs play in their lives; 2) responsible roles for drugs in their lives (i.e., illegal drugs); and 3) the necessary distinction individuals must make between drug *use* and drug *misuse*.

Distinguishing between use and misuse is no simple matter. It requires decisions about policy, programs, and the role of the educational institution vis-à-vis the handling of drug questions. Students offered no "solutions" to this dilemma, yet they emphasized the need to confront this question while planning for

drug education, and to seek consistency in policy and programs. By grappling with the issue of use vs. misuse schools could gain an appreciation of the complex nature of drug use.

STUDENTS AND THEIR CULTURE

The relationship between schools and peer group subsystems merits close examination. Students caution that prior to planning drug programs and policies schools should consider the value systems within student subcultures particularly as they differ from the values espoused by educators and administrators.

Benjamin S. Bloom summarizes a similar concern in the form of a challenge to researchers. "Schools and peer groups are increasingly in conflict, and the individual appears to learn very different things in these subsystems of society. Especially during adolescence when we find these two subsystems diverging. The conflicts between the values emphasized by schools and colleges and the values emphasized by various peer groups raise serious questions about the ways in which these two subsystems can be more effectively related. What we desperately need (is) research . . . which will point the way to the resolution of some of the more disturbing conflicts between the schools and adolescent peer groups" (Bloom, 1972, p. 347).

Bloom's statement of the need for studies of schools and their student subcultures is complemented by student feedback of a similar vein. The students, however, speak about the need for schooling to become more reflective of student perceptions of the larger society. In other words, schools must come to grips with powerful influences outside the school environment; peer influences, for example, often contradict the messages transmitted by teachers and other authority figures.

Few educators accept the fact that drug use often plays a centrally important role in the youth subculture. This conclusion was reported in the *Field Study of Drug Use and the Youth Culture* completed by Number Nine, Inc. of New Haven, Connecticut.[27] The directors of Number Nine who coordinated the study provided a leadership base founded u delivering drug services to the youth sub received funding from HEW to complete drug use in the lives of young people. The st effects of drug education, treatment and drug use patterns of the young people in the

This research effort in many ways exem youth interviewing other youth about drug or issues. For instance, Number Nine repo inherent in the use of youthful interviewers drug use information. Their interviewers (a personally familiar with their local drug "Most (interviewers) had some college exp able to interview youths, transcribe the inte questions, and make helpful interpretatio Number Nine interviewers, like other stude use structured interview-questionnaires. Sp tions were left up to the interviewers.

Their final report acknowledges the inco this flexible data collection method. The gr that "... what is lacking in consistency i original and exciting perspectives contribut the space made available by the lack of a complexity and specificity."

Youth-conducted surveys and interview Nine's have enlightened adults about dr preferences among youth (see sample stud Appendix C of this chapter). Obtaining p information of this nature from students is peer researchers who structure questionnai

[27] Number Nine, Inc. is a youth-oriented intervention center.

[28] Respondents were a part of the counter cultur accomplish change or to change themselves. Target young were those who indulged in counter cultural patterns of s or alternative services. The sampling comprised people who well as those who were *known* to have been drug users in t were those who were somehow associated with the co activity, lifestyle or vocation.

[29] Target cities included Berkeley, California; Santa F D.C., New Haven, Connecticut, and Manhattan, Kansas.

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NTS AND THEIR CULTURE

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study provided a leadership base founded upon their experience in delivering drug services to the youth subculture. Number Nine received funding from HEW to complete a study on the role of drug use in the lives of young people. The study also examined the effects of drug education, treatment and control efforts on the drug use patterns of the young people in their sample.[28]

This research effort in many ways exemplifies the benefits of youth interviewing other youth about drugs and related problems or issues. For instance, Number Nine reports unique advantages inherent in the use of youthful interviewers when seeking personal drug use information. Their interviewers (aged 20-30 years) were personally familiar with their local drug using communities.[29] "Most (interviewers) had some college experience, so they were able to interview youths, transcribe the interviews, ask meaningful questions, and make helpful interpretations of the material." Number Nine interviewers, like other student researchers, did not use structured interview questionnaires. Specific topics and questions were left up to the interviewers.

Their final report acknowledges the inconsistencies inherent in this flexible data collection method. The group reports, however, that ". . . what is lacking in consistency is made up for in the original and exciting perspectives contributed by the subjects in the space made available by the lack of a questionnaire of more complexity and specificity."

Youth-conducted surveys and interviews similar to Number Nine's have enlightened adults about drug use patterns and preferences among youth (see sample student questionnaires in Appendix C of this chapter). Obtaining personal or subjective information of this nature from students is greatly facilitated by peer researchers who structure questionnaires and determine the

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[28] Respondents were a part of the counter culture, using drugs primarily to accomplish change or to change themselves. Target young people (mostly white youths) were those who indulged in counter cultural patterns of social life including communes or alternative services. The sampling comprised people who *appeared* to be drug users, as well as those who were *known* to have been drug users in their youth. Preferred subjects were those who were somehow associated with the counter culture in appearance, activity, lifestyle or vocation.

[29] Target cities included Berkeley, California; Santa Fe, New Mexico; Washington, D.C.; New Haven, Connecticut; and Manhattan, Kansas.

depth and pace of interview conversations. These methods, however, require student involvement and control during all phases of the research.

Especially vital, in such instances, is the manner in which findings are handled. All too often, the results of youth-run studies are edited by adult sponsors to the extent that findings are no longer representative of the original report. In fact, controversial findings have been disclaimed by the sponsor altogether in some cases. Optimally, program planners, educato , and administrators should study student reports carefully, discuss findings with student researchers, and make appropriate program changes It is further suggested that the expectations of both students and adults be openly discussed prior to commencement of research studies. The failure of many institutions to take seriously student-amassed data has stifled student interest in conducting research. Student researchers are often motivated to undertake research because of the possibility that their involvement may initiate change (i.e., modifications in the curriculum, in the school environment or in the teaching process). Students justifiably question the value of commitment to a project which is not intended by adults to affect change. Apathy, distrust and cynicism often result. Subsequently, motivating students to cooperate in research can be an insurmountable obstacle without a belief in he value of student-adult dialogue as a mechanism for improvement and change.

The need for meaningful school experiences is partially met by participating in a serious research endeavor and having the support of schooi authorities in achieving the goals of the project. Ultimately, research activities can provide autonomous learning of the sort that rarely occurs in educational institutions.

STUDENT RESEARCHERS VIEW TEACHERS

In the limited context of drug education, many questions emerge concerning the skills which combine to determine teacher competence. Criteria related to the selection of teachers and the recruitment of teacher-training candidates remain undefined. To date, decisions about the school's drug educator, drug counselor or in-school drug "expert" are based on vague and arbitrary criteria, least of which appears to be functional c

Students overwhelmingly lament the a among these saddled with responsib courses. As a rule, drug educators and c information needed to handle drug e they require fundamental drug training can help those students with drug prob fronting drug decisions.

Students recommend selecting candi basis of their counseling expertise and t community drug programs. School pe educators (such as counselors, nurses, classroom teachers) should have acces about drug effects, the school's drug confidentiality, parental consent regulat privacy.

STUDENTS AND TH

The fear of drug sale and possession administrators to seek the assistance of Students report that a few schools su police, armed guards, undercover narc guards to apprehend and control drug p

The decision to use outside control policies is best made by students and te the extreme seriousness of the measure. police tactics often leads to illegal locker privacy. Students express great oppositi not members of the school community community, students believe, will operat trust and respect for student rights to pr forth.

Finally, schools have a responsibility to the drug laws pertaining to minors. St juvenile court judges report that sever handed down against minors. School a very least, be informed about the nature o when faced with a young student offende

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Students overwhelmingly lament the absence of drug knowledge among these saddled with responsibility for drug education courses. As a rule, drug educators and counselors lack the medical information needed to handle drug emergencies. Furthermore, they require fundamental drug training and information so they can help those students with drug problems as well as those confronting drug decisions.

Students recommend selecting candidates for training on the basis of their counseling expertise and their familiarity with other community drug programs. School personnel other than drug educators (such as counselors, nurses, administrators, and other classroom teachers) should have access to reliable information about drug effects, the school's drug policy and procedures, confidentiality, parental consent regulations, and student rights to privacy.

STUDENTS AND THE LAW

The fear of drug sale and possession in schools has led many administrators to seek the assistance of law enforcement officers. Students report that a few schools surveyed were using either police, armed guards, undercover narcotic agents or unarmed guards to apprehend and control drug pushing on school grounds.

The decision to use outside control agents to enforce school policies is best made by students and teachers together because of the extreme seriousness of the measure. For example, the use of police tactics often leads to illegal locker searches and invasions of privacy. Students express great opposition to "guards" who are not members of the school community. Members of the school community, students believe, will operate with a greater degree of trust and respect for student rights to privacy, due process and so forth.

Finally, schools have a responsibility to become informed about the drug laws pertaining to minors. Students who interviewed juvenile court judges report that severe decisions were being handed down against minors. School authorities should, at the very least, be informed about the nature of penalties or procedures when faced with a young student offender.

SUMMARY

This chapter has portrayed the nature and outcomes of several student drug research efforts. An overall analysis of these reports depicts the value of consumer analyses of school drug education activities. Further, the findings as reported reflect a number of useful guidelines for drug educators.

Clearly, students are capable of undertaking and, in many cases, successfully conducting objective research among their peers. With adult assistance and support these projects can validate the analytical abilities of young people. It should be kept in mind, however, that most efforts examined by the author utilized some amount of adult advice and supervision. Moreover, some of the student projects failed to achieve their goals for various reasons. In summary none of the efforts was perfect, yet collectively they show promise for the notion of active student leadership and assistance in drug education planning and evaluation.

Any plans for student research should
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project. Finally, student research findings
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vices, etc.) which may require consideratio
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issues might, in fact, be a natural spin
investigations. Their emergence, as a result
ultimately facilitate "prevention efforts" in t

APPENDIX A
1972 HIGH SCHOOL STUDENT PROJECTS FUNDED BY THE DRUG ABUSE COUNCIL, INC

CHICANOS UNIDOS AND KING COBRAS
c/o David Morales
Coordinator
El Paso Educational Research Project
1225 Wyoming Avenue, P.O. 9943
El Paso, Texas 79930

METRO HIGH SCHOOL
c/o Max Pepper
Department of Community Medicine
St. Louis University School of Medicine
1454 South Grand Boulevard
St. Louis, Missouri 63104

WISCONSIN STUDENT UNION
c/o Robert Paterson
The Wisconsin Coalition for Educational Reform, Inc.
216 North Hamilton Street
Madison, Wisconsin 53703

BLACK STUDENT UNION OF BOSTON, INC.
c/o Leon Rock
Director
60 Vernon Street
Roxbury, Massachusetts 02119

FREDERICK DOUGLASS UNITED COMMUNITY CENTER, INC.
c/o William A. Sanders, Jr.
Executive Director
2027 Martin Luther King, Jr. Avenue, S.E.
Washington, D.C. 20020

STUDENT RESEARCH TEAM OF WINGATE HIGH SCHOOL
c/o Mitchell Strauss
Drug Education Specialist
George W. Wingate High School
300 Putnam Avenue
Brooklyn, New York

STUDENTS ALLIE
COMMUNITY A
SAN FRANCISC
c/o Sid Valledor
1228 Page Street
San Francisco, Calif

DAYTON DRUG PR
c/o Langston Thoma
Director, Montgome
Action Agency
3290 North Maine S
Dayton, Ohio 45405

UNITED CLUBS OF
INC.
c/o Beauregard Cum
Project Director
4492 Hallendale Bea
Hollywood, Florida

SUMMARY

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efforts was perfect, yet collectively they
notion of active student leadership and
tion planning and evaluation.

Any plans for student research should begin with an understanding that students can be motivated to examine and constructively criticize the school system as an alternative to apathy, disillusionment or even drug use. Further, student research need not necessarily be limited to long-term, ongoing projects; short projects of a specified length are often more successful at holding student interest than protracted efforts. Extended research efforts (i.e., action projects with a specific focus), if desired, should be allowed to evolve as a natural outgrowth of the initial research project. Finally, student research findings frequently reveal the existence of other school problem areas concerning school procedures, school/community relations or policies, needed services, etc.) which may require consideration before drug-related solutions can be arrived at. The possible emergence of broader issues might, in fact, be a natural spinoff of drug-oriented investigations. Their emergence, as a result of drug studies, may ultimately facilitate "prevention efforts" in their most useful sense.

APPENDIX A

2 HIGH SCHOOL STUDENT PROJECTS FUNDED BY THE DRUG ABUSE COUNCIL, INC.

KING COBRAS

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Medicine
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Educational

BLACK STUDENT UNION OF BOSTON, INC.
c/o Leon Rock
Director
60 Vernon Street
Roxbury, Massachusetts 02119

FREDERICK DOUGLASS UNITED COMMUNITY CENTER, INC.
c/o William A. Sanders, Jr.
Executive Director
2027 Martin Luther King, Jr. Avenue, S.E.
Washington, D.C. 20020

STUDENT RESEARCH TEAM OF WINGATE HIGH SCHOOL
c/o Mitchell Strauss
Drug Education Specialist
George W. Wingate High School
300 Putnam Avenue
Brooklyn, New York

STUDENTS ALLIED FOR EFFECTIVE COMMUNITY AND EDUCATION OF SAN FRANCISCO
c/o Sid Valledor
1228 Page Street
San Francisco, California 24117

DAYTON DRUG PROJECT
c/o Langston Thomas
Director, Montgomery County Community Action Agency
3290 North Maine Street
Dayton, Ohio 45405

UNITED CLUBS OF BROWARD COUNTY, INC.
c/o Beauregard Cummings
Project Director
4492 Hallendale Beach Boulevard
Hollywood, Florida 33023

OUNCIL

APPENDIX B
CASE STUDIES OF FOUR STUDENT RESEARCH PROJECTS

Metro High School Youth and Drug Education Project —St. Louis, Missouri

". . . Drug education . . . comprises only one movie on cigarette smoking, one movie on alcoholism and finally, one movie that covers marijuana and narcotics. This last movie, on marijuana and narcotics was declared non-factual by the Federal government. However, this film remains the sole "educational" exposure . . . for all students in the St. Louis public high schools." The seven student researchers from Metro High School used the above statement as a rationale for their investigations into drug use, local school responses and an examination of existing resources.

As opposed to the other eight student teams funded by the Drug Abuse Council, representatives from Metro matriculated daily in an environment of exploration and self-determination. Labelled a "school without walls," Metro's curriculum consisted of a variety of instructional experiences jointly planned by staff and students. Metro students, due to the school's utilization of community resources, had access to the school's educational staff as well as members of St. Louis University's School of Medicine when technical assistance needs arose. Accordingly, students took advantage of these resource people in developing an excellent proposal and designing their survey instrument. (The Metro instrument, minus its knowledge items, is included in Appendix C of this chapter). The students agreed to collaborate with medical students and faculty; the University's Department of Community Medicine, therefore, functioned as fiscal agent for the project. Despite adult control of funds, students formed the core staff and implemented the project themselves.

Project goals were: 1) to investigate the nature and extent of the so-called "youth drug problem" among high school students; 2) to determine the content and form of drug education most desired by these youth; and 3) to ultimately develop innovative, youth-oriented education programs and resources to meet expressed student needs. The Metro team surveyed 1051 sophomores in eight of the ten public high schoo pretesting and, consequently, revising th to formal data collection.

Although the team intended to d education curriculum, the three month such specialized work. They did rec appropriate educational materials replac immediately. The low measures of s support to their suggestions (out o knowledge items, only one respondent the information correctly). Students also education courses be expanded in length drug useage in the St. Louis schools. Bo and the longer courses, they conclud younger age groups as well.

South Broward County Youth Advisory B —Hollywood, Florida

South Broward County's Youth A comprises a teenage membership which i of the student research project by TH provided the first vehicle to initiate affirm in area schools. Already operational, YAC United Clubs of Broward County, Inc middle and senior high school students c of drug use and related school/commun student survey instrument in Appendix C).

United Clubs of Broward County acte provided student researchers with daily Students contacted school administrato adult advisors from each of the 15 sch were based upon proven sensitivity to on the ability to relate effectively to student

According to YAC's young research

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CASE STUDIES OF FOUR STUDENT RESEARCH PROJECTS

Youth and Drug Education Project

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ds. The Metro team surveyed 1051 sophomores in eight of the ten public high schools. Much time was spent pretesting and, consequently, revising the survey instrument prior to formal data collection.

Although the team intended to develop and test a drug education curriculum, the three month project time precluded such specialized work. They did recommend, however, that appropriate educational materials replace existing media resources immediately. The low measures of student knowledge added support to their suggestions (out of a possible 37 correct knowledge items, only one respondent answered more than half the information correctly). Students also recommended that drug education courses be expanded in length to reflect the amount of drug useage in the St. Louis schools. Both the improved curricula and the longer courses, they conclude, should be offered to younger age groups as well.

South Broward County Youth Advisory Board —Hollywood, Florida

South Broward County's Youth Advisory Council (YAC) comprises a teenage membership which is entirely Black. Funding of the student research project by The Drug Abuse Council provided the first vehicle to initiate affirmative Black youth action in area schools. Already operational, YAC (sponsored by the adult United Clubs of Broward County, Inc.), surveyed over 5000 middle and senior high school students concerning their opinions of drug use and related school/community issues. (See sample student survey instrument in Appendix C).

United Clubs of Broward County acted as project sponsor and provided student researchers with daily access to physical space. Students contacted school administrators for support, selected adult advisors from each of the 15 school surveyed (selections were based upon proven sensitivity to on-campus drug scene and the ability to relate effectively to student workers).

According to YAC's young researchers, "Broward County

youth input has not been obtained nor utilized in developing ways and means to prevent and/or curb the widespread use of drugs on and off school campuses." In accordance with their desire that school administrators become involved in the prevention of widespread drug use, they pursued the following goals: 1) identify how school officials deal with drug users; 2) identify school programs designed to provide helping services to drug users; 3) identify major causes of increased drug use among teenagers, and 4) solicit student attitudes toward drugs.

To increase student cooperation as respondents, YAC used the words of a popular hit record entitled "Ain't Understanding Mellow?" as a philosophical introduction to the questionnaire.

Following the student evaluation effort, YAC representatives planned to pursue the establishment of the following organized efforts. 1) A school drug advisory board to include a group of interested students who will lend assistance to school administrators developing school programs. The board is intended to develop closer ties between administration and student body. 2) YAC will continue to conduct surveys in elementary, junior and senior high schools. It is expected that results will offer a "nitty gritty" picture of student drug needs prior to the development of additional traditional programs. 3) A "Big Brother" program will be established so that elementary-aged students can participate in planned extracurricular activities with older students whom they respect. As described in the Introduction and Overview, planners are encouraged to experiment with the peer group reinforcement and reinforcement role model concepts, based on past studies, for drug education.

Wisconsin Student Union —Madison, Wisconsin

Members of Madison's Student Union research team, since most of the city schools were utilizing an acceptable curriculum, decided to assess the effects of those teaching approaches on 49 fourth and sixth graders who were exposed to the course of study. Students believe that Madison's upper middle class university atmosphere accounted for the admirable calibre of curricular materials examined, they believe this influenced the nature of

programs available to students in grades
Beyond the printed course outline, however,
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Student researchers administered a know
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The team was critical of administrators wh
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frequently "tokenistic" youth participatio
meetings (such students are seen by their p
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Chicanos Unidos of Ysleta —El Paso, Texas

El Paso's Mexican American community
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believe this influenced the nature of

programs available to students in grades 4, 6, 9, 11 and 12. Beyond the printed course outline, however, Madison schools fail to specify teaching guidelines ("team teaching" is frequently used during the 2-3 week drug units; educators are responsible for part of the program which relates to their area of expertise).

Student researchers administered a knowledge/attitude questionnaire intended to measure 1) student opinions compared to the attitudinal goals espoused by the curriculum; 2) student comprehension of standardized factual material presented; and 3) student perceptions of the teaching methods employed as part of the special drug unit. (The sample student questionnaire is included in Appendix C.)

The final report acknowledges the limitations of the small sample. Nevertheless, the students provide interesting conclusions. For example, they remind school personnel that: 1) The value systems of elementary-aged children are in a constant state of flux, subject to change in response to many influences. Elements of student doubt often lead to drug experimentation, and "if doubt becomes uncertainty, it can lead to limited social drug use." 2) When discussing dependency, educators should approach the topic as one of a range of escape behaviors. 3) Drug programs should realize that student drug use stems more from alienation than from feelings of rebellion. Alienation, often caused by repressive school environments, can catalyze student drug use. 4) Educators should avoid imposing their own drug-related values on their students. Students should be taught that there are many different ways to handle social problems and each way can be "right" depending on the circumstances and the individual's needs. Drug discussions should focus on individual *and* societal drug use.

The team was critical of administrators who fail to seek student inputs as a part of drug program planning. Students perceived frequently "tokenistic" youth participation in administrative meetings (such students are seen by their peers as "water boys" for the school authorities).

Chicanos Unidos of Ysleta
—El Paso, Texas

El Paso's Mexican American communities are plagued by conflict and violence resulting from youthful abuse of glue and

spray paint (inhalants). These problems are further exacerbated by the non-existence of recreational facilities. The Chicanos Unidos and the King Cobras, two youth groups whose members have lived through many drug experiences, pooled their resources to find out more about the city's inhalent abuse problems.

Research project goals included studies of the following areas: 1) to what extent are spray and glue used by youth; 2) by what means, if any, are glue and spray made readily accessible to youth; 3) to what extent, if any, have merchants of these products violated city ordinances by knowingly providing the spray or glue to youth; 4) what means can be useful in deterring youth from using these products; and 5) to what extent has use of these products caused conflicts within and between neighborhoods, affected high school dropout rates, juvenile delinquency, etc.

Students conducted surveys within agencies delivering drug services, merchants who sell the products in question, the El Paso jail and juvenile court. Questionnaires were distributed in several elementary and secondary schools. Confidential surveys were also distributed to 30 other schools (often with the assistance of police and judges). Results of the more than 7000 school inquiries create a clear picture of young El Paso glue sniffers.

The final report estimated that 57% of students surveyed were inhalant abusers; a high percentage of the users (75% in one school district alone) had friends who sniffed and had never suffered adverse reactions. 72% of reported users w of which 70% were male students and average age of a student's first experimen was 14.3 years. The report is rich wi frequently ignored use and misuse of so recommended for perusal by educators fronting similar incidences of glue sniffing

In addition to their comprehensive re used their findings as the basis for educational effort. Bumper stickers and p printed and distributed. A slide presenta shown to local groups. Finally, in coope Police Department, stores selling glue and and informed of the city ordinances proh to those under 17 years of age. As a result members reported an immediate decrease i They attribute this decrease to the peer pre of their outspoken efforts.

Recommended methods of prevention r included: 1) the provision of meaningful alternatives to boredom; 2) more jobs; 3) e youth and adults as well as merchants c inhalents; and 4) a deemphasis of the "m associated with the use of certain drugs.

APPENDIX C

SAMPLE SURVEY INSTRUMENTS AND QUESTIONNAIRES USED IN STUDENT RESEARCH PR

Metro High School Youth and Drug Education Project
–St. Louis, Missouri

Survey Questionnaire

Year in School _____ Age _____ Race _____ Sex _____

Directions: Place a check to indicate your answer.

1. Do you think there is a "drug proble a whole?

   Yes ____ No____

2. Do you think there is a "drug pro St. Louis?

   Yes ____ No ____

). These problems are further exacerbated by recreational facilities. The Chicanos Unidos two youth groups whose members have lived xperiences, pooled their resources to find out inhalent abuse problems.

oals included studies of the following areas: e spray and glue used by youth; 2) by what e and spray made readily accessible to youth; if any, have merchants of these products ces by knowingly providing the spray or glue eans can be useful in deterring youth from ; and 5) to what extent has use of these nflicts within and between neighborhoods, dropout rates, juvenile delinquency, etc.

d surveys within agencies delivering drug ho sell the products in question, the El Paso t. Questionnaires were distributed in several ndary schools. Confidential surveys were also er schools (often with the assistance of police of the more than 7000 school inquiries create ng El Paso glue sniffers.

timated that 57% of students surveyed were gh percentage of the users (75% in one school riends who sniffed and had never suffered adverse reactions. 72% of reported users were Mexican Americans, of which 70% were male students and 30% were female. The average age of a student's first experimentation with glue or paint was 14.3 years. The report is rich with information on the frequently ignored use and misuse of solvents in El Paso. It is recommended for perusal by educators and administrators confronting similar incidences of glue sniffing among their students.

In addition to their comprehensive report, Chicanos Unidos used their findings as the basis for an active community educational effort. Bumper stickers and pamphlets were designed, printed and distributed. A slide presentation was prepared and shown to local groups. Finally, in cooperation with the El Paso Police Department, stores selling glue and spray were contacted and informed of the city ordinances prohibiting sale of inhalants to those under 17 years of age. As a result of their activities, team members reported an immediate decrease in the use of spray paint. They attribute this decrease to the peer pressure exerted as a result of their outspoken efforts.

Recommended methods of prevention reported by the students included. 1) the provision of meaningful recreation programs as alternatives to boredom, 2) more jobs, 3) educational materials for youth and adults as well as merchants concerning the abuse of inhalents; and 4) a deemphasis of the "manly" image currently associated with the use of certain drugs.

APPENDIX C

E SURVEY INSTRUMENTS AND QUESTIONNAIRES USED IN STUDENT RESEARCH PROJECTS

outh and Drug Education Project

_____ Age _____ Race _____ Sex _____

ock to indicate your answer.

1. Do you think there is a "drug problem" in this country as a whole?

   Yes ____ No____ I don't know ____

2. Do you think there is a "drug problem" in the city of St. Louis?

   Yes ____ No ____ I don't know ____

3. Did you have a drug education program in your grade school?

Yes ____ No ____

Rate the program 1-5 for effectiveness, 1 being most effective–5 not effective at all. ____

4. Do you have a drug education program in your high school now?

Yes ____ No ____

Rate the program 1-5 for effectiveness, 1 being most effective–5 not effective at all. ____

5. Have you received any information on drugs or drug effects in any of your other courses?

Yes____ No____ Which Course?_____

Was the information useful?

Yes ____ A little ____ No ____

If your answer is no, why was it not useful?

6. Have you received any drug information outside the classroom?

Yes ____ No ____ If so, where?_____

Rate the information 1-5 for usefulness, 1 being most useful–5 not useful at all.____

7. Do any of your friends use hard drugs, smoke dope or take pills?

Yes ____ No ____ I don't know ____

8. Have you ever

(a) smoked marijuana? Yes____ No____
(b) taken uppers? Yes____ No____
(c) taken downers? Yes____ No____
(d) dropped acid? Y
(e) shot heroin? Y
(f) snorted cocaine? Y
(g) used anything else? Y

wha

9. Have your parents talked with you about

Never ____ Seldom ____
Often____ Too Much ____

10. Are your parents knowledgeable about d

Yes ____ No ____ T

11. What do you think the attitudes of p drug users?

Negative ____
Indifferent ____

12. Do you think the police add to the drug

Yes ____ No ____ I

If your answer is yes, how do they add t

Directions: For the following questions, ind writing the appropriate letter in the space pro

13. How much concern about the "drug prob adults in the city?____

(a) too little (b) enough

14. How much do you think you know abou

(a) too little (b) enough

education program in your grade school?

No ____

5 for effectiveness, 1 being most effective—
l. ____

education program in your high school now?

No ____

5 for effectiveness, 1 being most effective—
l. ____

any information on drugs or drug effects
r courses?

____ Which Course?_____

n useful?

A little ____ No ____

, why was it not useful?

ny drug information outside the classroom?

No ____ If so, where?_____

on 1-5 for usefulness, 1 being most useful—
____

nds use hard drugs, smoke dope or take pills?

No ____ I don't know ____

ana? Yes ____ No____
Yes ____ No____
? Yes ____ No____

OUNCIL

(d) dropped acid? Yes ____ No____
(e) shot heroin? Yes ____ No____
(f) snorted cocaine? Yes ____ No____
(g) used anything else? Yes ____ No____
what? _____

9. Have your parents talked with you about drugs?

Never ____ Seldom ____ Sometimes ____
Often____ Too Much ____

10. Are your parents knowledgeable about drugs?

Yes ____ No ____ To some extent____

11. What do you think the attitudes of policemen are towards drug users?

Negative ____ Want to help ____
Indifferent ____ I don't know ____

12. Do you think the police add to the drug problem?

Yes ____ No ____ I don't know ____

If your answer is yes, how do they add to the problem?

Directions: For the following questions, indicate your choice by writing the appropriate letter in the space provided.

13. How much concern about the "drug problem" is expressed by adults in the city?____

(a) too little (b) enough (c) too much

14. How much do you think you know about drugs?____

(a) too little (b) enough (b) too much

15. How much emphasis is placed on drug education in your school?____

(a) too little (b) enough (c) too much

16. If you were "busted" for using drugs, who would you rather talk to or get help from? Pick three you would most likely want. Number them in order of preference.____ ____ ____

a. parents
b. police
c. school official
d. teacher
e. friends
f. doctor
g. psychologist

17. How would you change or improve drug education for all students?____

a. More realistic films
b. Talking to resource people who have used drugs
c. Have this course taught by teachers who know something about drugs from actual experience
d. Have this course instructed by a medical doctor
e. Other(s) _____

18. What do you think of this survey?____

a. like
b. dislike
c. love
d. hate
e. undecided

Comments:

South Broward County Youth Advisory Council
—Hollywood, Florida

Sample Survey Questionnaire

1. Which of the following people would be the best person to inform you about drugs and drug use?

a. Friend
b. Doctor
c. Law enforcement official
d. Psychologist working in a drug treatment program
e. Clergyman or minister
f. Teacher or Counselor
g. Ex-drug user
h. Someone else

hasis is placed on drug education in your

(b) enough (c) too much

sted" for using drugs, who would you rather elp from? Pick three you would most likely em in order of preference.____ ____ ____

e. friends
f. doctor
g. psychologist

change or improve drug education for all

films
ource people who have used drugs
rse taught by teachers who know something
om actual experience
rse instructed by a medical doctor

18. What do you think of this survey?____

a. like
b. dislike
c. love
d. hate
e. undecided

Comments:

---

ty Youth Advisory Council

onnaire

ng people would be the best person to inform you about drugs and drug use?

nt official
rking in a drug treatment program
inister
nselor

The following are yes/no questions. Read each statement and circle either 1 for "yes" or 2 for "no" if you know the answer. If y
circle 3 for "don't know."

	Yes	No
2. Do you think that unlegalized drugs, such as marijuana, ups, downs, heroin, etc. lead to personal dependency?	1	2
3. Do you feel that there is need for drug education programs or courses on campus?	1	2
4. Do you feel students should be punished for drug usage on campus?	1	2
5. Do any of your classmates use drugs on school campus?	1	2
6. Do you feel that outsiders push drugs on campus during school hours?	1	2
7. Do you think there should be some medical assistance for drug abuse on all school campuses?	1	2
8. If you *had* a drug problem, do you think the counselors know enough about drugs in order to be of some assistance to you?	1	2
9. Do you think the school administration is doing enough about the drug problem on campus?	1	2
10. Heroin (horse, H, junk, etc.) can cause death by overdosing.	1	2
11. LSD can cause hallucinations (such as seeing things that are not there).	1	2
12. Marijuana (pot, grass, weed, tea, etc.) is physically addictive.	1	2

Please read the following statements and circle the number which indicates the extent to which you agree or disagree with the stateme
appears in the following statements, it refers to *illegal drug use* and *not* to drugs prescribed by your physician.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disa
13. There is nothing wrong with smoking marijuana as long as a person does so in moderation	1	2	3	4
14. Once an addict, always an addict	1	2	3	4

questions. Read each statement and circle either 1 for "yes" or 2 for "no" if you know the answer. If you do not know the answer,

	Yes	No	Don't Know
egalized drugs, such as marijuana, ups, d to personal dependency?	1	2	3
is need for drug education programs	1	2	3
hould be punished for drug usage on	1	2	3
ates use drugs on school campus?	1	2	3
ders push drugs on campus during	1	2	3
uld be some medical assistance for ol campuses?	1	2	3
lem, do you think the counselors know order to be of some assistance to you?	1	2	3
ol administration is doing enough about mpus?	1	2	3
, etc.) can cause death by overdosing.	1	2	3
nations (such as seeing things that are	1	2	3
weed, tea, etc.) is physically addictive.	1	2	3

tatements and circle the number which indicates the extent to which you agree or disagree with the statement. When the word "drug" atements, it refers to *illegal drug use* and *not* to drugs prescribed by your physician.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
with smoking person does	1	2	3	4	5
an addict	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree Nor Disagree	D
15. Everyone should try drugs at least once to find out what they are like.....	1	2	3	
16. Drug addicts should be treated as sick people and not as criminals	1	2	3	
17. Current laws regarding marijuana are too severe	1	2	3	
18. Current laws regarding heroin use are too severe	1	2	3	
19. Drug use should be a matter of personal decision	1	2	3	
20. Marijuana is addictive	1	2	3	
21. A lot of people need drugs to cope	1	2	3	
22. Smoking marijuana is no more harmful than drinking liquor	1	2	3	
23. Barbiturates—prescription sleeping pills—can lead to physical as well as psychological dependence	1	2	3	
24. Drugs are used because it is fun to get high	1	2	3	
25. Most drugs do not endanger health	1	2	3	
26. It is extremely difficult to find out where to obtain drugs	1	2	3	
27. Most people think twice about using drugs because it is against the law	1	2	3	
28. There would be no "drug problem" if the newspapers, radio and television didn't play it up	1	2	3	
29. Anyone with a little self-discipline can avoid addiction to opiates (heroin, codeine, morphine, opium, etc.)	1	2	3	
30. Most junkies are involved in other criminal activities besides the illegal use of drugs	1	2	3	

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
y drugs at least hat they are like.....	1	2	3	4	5
bc treated as as criminals	1	2	3	4	5
ing marijuana are	1	2	3	4	5
ing heroin use are	1	2	3	4	5
a matter of personal	1	2	3	4	5
ve	1	2	3	4	5
d drugs to cope	1	2	3	4	5
is no more harmful than	1	2	3	4	5
iption sleeping pills— as well as psycholog·	1	2	3	4	5
use it is fun to get	1	2	3	4	5
ndanger health	1	2	3	4	5
cult to find out gs	1	2	3	4	5
wice about using drugs the law	1	2	3	4	5
"drug problem" if the nd television didn't	1	2	3	4	5
self-discipline can piates (heroin, opium, etc.)	1	2	3	4	5
olved in other criminal illegal use of drugs	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disa
31. All drug abusers are pretty much alike	1	2	3	4
32. Most people who smoke marijuana use for a while and then go to something stronger	1	2	3	4
33. Addicts will do anything to get more drugs ..	1	2	3	4
34. Most people use drugs to forget about painful things in their lives	1	2	3	4

Please respond to the following questions accordingly. Check best answer. When need be, answer in short answer.

35. If you have used drugs before, or still use drugs, which of the following is your primary reason for using them.
    a. Curiosity
    b. Pleasure, Fun or Kicks
    c. To be Sociable
    d. To Escape Pressure
    e. To Help Study
    f. Other

36. Who do you think is most concerned about drugs?
    a. Teachers
    b. Coaches
    c. Administration
    d. Guidance Counselors
    e. Clubs
    f. Other

37. What correcting measures should be taken for those students who use drugs on campus?
    a. Parent-Teacher Conference
    b. Suspension
    c. Rehabilitation
    d. Student-Teacher Conference
    e. Other (State briefly)

Summary
–South Broward Survey

The following responses reflect students reactions to questions used in the questionnaire covering 1,307 students:

- 57% agreed that there should be dr on campuses;
- 51% state that students should be p on campus;

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
tty much alike	1	2	3	4	5
e marijuana use for a mething stronger	1	2	3	4	5
g to get more drugs ..	1	2	3	4	5
o forget about painful	1	2	3	4	5

ing questions accordingly. Check best answer. When need be, answer in short answer.

before, or still use drugs, which of the following is your primary reason for using them.

cks

st concerned about drugs?

rs

es should be taken for those students who use drugs on campus?

ference

nference

)

- 57% agreed that there should be drug education program on campuses;
- 51% state that students should be punished for drug usage on campus;

s reflect students reactions to questions e covering 1,307 students:

- 53% indicate that their classmates use drugs on campus;
- 32% agree that outsiders push drugs on campus during school hours–38% disagree;
- 60% agree that medical assistance should be available on campus;
- 51% feel counselors do not know enough about drugs to be of assistance to users;
- 48% feel the school administration does not do enough about campus drug problems;
- 54% agree with moderate marijuana smoking;
- 50% disagree that education is the best way of preventing drug abuse; 32% agree;
- 62% agree that drug addicts should be treated as sick people and not criminals;
- 52% agree laws are too severe regarding marijuana, while 62% disagree that heroin laws are too severe;
- 65% agree that drug use is a matter of personal decision;
- 57% agree that smoking marijuana is more harmful than drinking liquor;
- 45% agree that drugs are used because it's fun to get high; 23% neither agree nor disagree, while 32% disagree;
- 62% disagree that its extremely difficult to find where to obtain drugs;
- 59% agree that most junkies are involved in other criminal activities;
- 32% feel drugs are used to escape pressure;
- 29% feel guidance counselors are the most concerned about drugs.

Wisconsin Student Union
–Madison, Wisconsin

Sample Questionnaire

1. Where do you think you have lea know about drugs?

   Please number the blanks from according to the place where you the place where you learned the leas

   ____in school (1)

   ____from your parents (5)

   ____from your brothers and sisters

   ____from your friends (3)

   ____from television or the radio (2)

   ____from newspapers and magazine

NOTE: Numbers in parenthesis are aver to the questions

2. In what ways have teachers, princ *school* taught you about drugs and t you?

   ____adults at school haven't taught

3. Please number the blanks from 1 to (#1) to the least (#7) commonly used

   ____movies about drugs (also slides ings, etc.) (1)

   ____projects that your teacher made

   ____visits from policemen (6)

e that their classmates use drugs on campus;

that outsiders push drugs on campus during s—38% disagree;

that medical assistance should be available on

ounselors do not know enough about drugs to nce to users;

ne school administration does not do enough us drug problems;

vith moderate marijuana smoking;

e that education is the best way of preventing 32% agree;

that drug addicts should be treated as sick not criminals;

ws are too severe regarding marijuana, while 62% t heroin laws are too severe;

hat drug use is a matter of personal decision;

that smoking marijuana is more harmful than uor;

that drugs are used because it's fun to get high; agree nor disagree, while 32% disagree;

e that its extremely difficult to find where to s;

that most junkies are involved in other criminal

ugs are used to escape pressure;

uidance counselors are the most concerned .

Wisconsin Student Union
—Madison, Wisconsin

Sample Questionnaire

1. Where do you think you have learned what you presently know about drugs?

   Please number the blanks from 1 to 6 below, in order, according to the place where you learned the most (#1), to the place where you learned the least (#6).

   _____in school (1)

   _____from your parents (5)

   _____from your brothers and sisters (6)

   _____from your friends (3)

   _____from television or the radio (2)

   _____from newspapers and magazines (4)

NOTE: Numbers in parenthesis are averages of student responses to the questions

2. In what ways have teachers, principals, or other *adults at school* taught you about drugs and the things that drugs do to you?

   _____adults at school haven't taught me anything about drugs

3. Please number the blanks from 1 to 7 below, from the most (#1) to the least (#7) commonly used way of teaching:

   _____movies about drugs (also slides, filmstrips, tape recordings, etc.) (1)

   _____projects that your teacher made you do (4)

   _____visits from policemen (6)

_____visits from doctors or nurses (7)

_____visits from former drug addicts (people who were so involved with drugs that they couldn't stop using them) (5)

_____lectures by teacher (2)

_____books or parts of books brought to class by your teacher (3)

_____other

NOTE: Numbers in parenthesis are averages of student responses to the questions.

3. Teachers quite often bring in people from outside of the school to speak to students about things that they are interested in, or about which they know a great deal. In the time that you have been in school, have any such people ever come to your classes to speak about drugs?

_____yes _____no

If yes, please put the number of times that they spoke in the blanks below.

_____How many times did a policeman come to your class? (1)

_____How many times did a doctor come to your class? (2)

_____How many times did a former drug addict come to your class? (3)

NOTE: Numbers in parenthesis represent most frequent (#1) to least frequent (#3).

4. If you can think of any *other* people who came to your classes to talk to you about drugs, please list them here, and tell use how many times each type of person came to your class.

NOTE: 3 seventh graders mentioned a worker at a halfway house for former drug addicts.

5. Many people seem to use drugs to
better. Some people use drugs to ma
better"—to get rid of unpleasant feeli
anger, unhappiness, and so on.

Please name some other ways, besides d
could use to make their minds "feel bett

NOTE: Responses included ingestion of
sleeping, walking, joking, eating, traveling,
name a few.

6. Please list some drugs that are commonly

-adults:

-people in college or high school:

-people your age:

NOTE: Every imaginable drug was listed f
distinction appeared between categories
illegal drugs.

7. If you know somebody who was usin
would you feel about them?

_____I would strongly avoid them (3)
_____I might avoid them (2)
_____I would neither avoid nor make frie
_____I might make friends with them (4)
_____I would definitely make friends with

NOTE: The first and last items received identi

ctors or nurses (7)

rmer drug addicts (people who were so drugs that they couldn't stop using them)

cher (2)

of books brought to class by your teacher

renthesis are averages of student responses

en bring in people from outside of the to students about things that they are out which they know a great deal. In the been in school, have any such people ever s to speak about drugs?

____no

ne number of times that they spoke in the

mes did a policeman come to your class?

es did a doctor come to your class? (2)

nes did a former drug addict come to your

renthesis represent most frequent (#1) to

of any *other* people who came to your ou about drugs, please list them here, and times each type of person came to your

rs mentioned a worker at a halfway house

5. Many people seem to use drugs to make themselves feel better. Some people use drugs to make their minds "feel better"—to get rid of unpleasant feelings such as boredom, anger, unhappiness, and so on.

   Please name some other ways, besides drugs, that such people could use to make their minds "feel better."

NOTE: Responses included ingestion of legal drugs, fighting, sleeping, walking, joking, eating, traveling, yoga, and reading, to name a few.

6. Please list some drugs that are commonly used by:

   -adults:

   -people in college or high school:

   -people your age:

NOTE: Every imaginable drug was listed for each category. No distinction appeared between categories regarding legal vs. illegal drugs.

7. If you know somebody who was using illegal drugs, how would you feel about them?

   ____I would strongly avoid them (3)
   ____I might avoid them (2)
   ____I would neither avoid nor make friends with them (1)
   ____I might make friends with them (4)
   ____I would definitely make friends with them (3)

NOTE: The first and last items received identical responses.

8. If none of the above choices fits, please tell us in your own words how you would feel about somebody who was using illegal drugs:

9. Let's say that you were thinking about smoking a cigarette or drinking alcohol. In making your decision whether or not to use tobacco or alcohol, whose advice would you consider most important?

   Please number the blanks below from 1 to 7, in order, from the person whose advice you would consider the most important (#1), to the person whose advice you would consider the least important (#7).

   _____a doctor or nurse (2)

   _____a teacher (6)

   _____a friend, or group of friends (3)

   _____a parent (1)

   _____a policeman (4)

   _____an advertisement in a magazine showing people having fun using drugs. (7)

   _____a clergyman (priest, minister, rabbi, etc.) (5)

NOTE: Numbers in parenthesis are averages of student responses to the questions.

10. If you can think of any other people consider important in making your d here:

11. Why do you think people take drug than one answer)

    _____because their doctors tell them to

    _____as a part of a religious ceremor selected this option)

    _____because they are illegal (6)

    _____to make them feel less worried or

    _____because other people do (1)

    _____to see what drugs are like, or for t

    _____to solve their problems (3)

NOTE: Numbers in parenthesis are average to the questions.

12. In the space following, name the dr smoke:_____

    NOTE: Responses included nicotine, t pot and tar.

bove choices fits, please tell us in your own would feel about somebody who was using

ou were thinking about smoking a cigarette or . In making your decision whether or not to alcohol, whose advice would you consider

he blanks below from 1 to 7, in order, from ose advice you would consider the most , to the person whose advice you would t important (#7).

nurse (2)

)

group of friends (3)

n (4)

ement in a magazine showing people having rugs. (7)

n (priest, minister, rabbi, etc.) (5)

parenthesis are averages of student responses

10. If you can think of any other people whose advice you would consider important in making your decision, please list them here:

11. Why do you think people take drugs? (you can have more than one answer)

_____because their doctors tell them to (5)

_____as a part of a religious ceremony (NOTE: no student selected this option)

_____because they are illegal (6)

_____to make them feel less worried or upset; happier (2)

_____because other people do (1)

_____to see what drugs are like, or for the fun of it (4)

_____to solve their problems (3)

NOTE: Numbers in parenthesis are averages of student responses to the questions.

12. In the space following, name the drug found in cigarette smoke:_____

NOTE: Responses included nicotine, tobacco, cancer, heroin, pot and tar.

11 Program Planning Dimensions

by

John D. Swisher

The primary purpose of this handbook is to assist individuals with the evaluation of operational drug education programs. It is recognized by the author of this chapter, however, that there are numerous agencies doing preliminary planning or, based on research findings, are reassessing their present activities. This chapter, therefore, presents several of the essential decisions which must be confronted as a part of planning for more effective programs. The planning questions to be discussed in this chapter include:

- What is the *scope* of the program?
- What are the *objectives* of the program?
- Does the program emphasize *information, attitudes, behavior* or some combination of these elements?
- What is the *basic philosophy* of the program?
- *Who* is the program to serve?
- Is the program *direct* or *indirect*?
- What *resource personnel* are to be included in the program?
- What role should *educational media* play in the program?
- Is the program to be *evaluated*?

WHAT IS THE SCOPE OF THE PROGRAM?

Limiting the program scope is a critical first step in effective planning. Schools wishing to develop drug programs for young people should begin their planning by addressing two fundamental needs. Prevention programs require:

- The development and implementation of a drug policy
- The design and delivery of a drug prevention effort

Both these issues require definition; once defined, they reflect the program scope.

Drug policies, for example, are the guidelines to be used by agency personnel in the event that a young person is apprehended while consuming or distributing drugs on the premises. As discussed in Chapter 10, institutions frequently fail to define

reasonable, workable drug policies. "Present school (drug) policies," according to the National Education Association, "punish an individual with little regard for other penalties already imposed by civil authority. Policies are frequently implemented in haste to insure smooth operation of the institution, jeopardizing the rights and dignity of those involved in the drug situation. In general, policies should ensure proper disposition of cases involving school personnel, teachers, students, custodians, secretarial help, and others who may be involved." Each agency must define for itself the kind of policy guidelines which are most appropriate. Policy development should not be defined by administrators alone, excluding the opinions of staff and students who will use and be affected by it. Rather, all appropriate groups (especially students and their parents) should have a role in its development. Once policy becomes effective, all school personnel and clients should be made explicity aware of the guidelines and their implications.

Drug policy and drug program design are interrelated. The policy statement, for example, defines the nature of prevention programs and services which the school is realistically able to offer. Together they should reflect the medical, legal or educational capabilities available to the school for policy enforcement and program implementation.

For these reasons, educational institutions are encouraged to limit the scope of their prevention efforts to drug education. Lacking specialized medical staff and drug emergency facilities, schools should avoid involvement in drug treatment or crisis intervention activities. Depending on the extent of use among students, it may be necessary, therefore, to negotiate with other community groups to provide intervention and treatment services for which they have the expertise, funding and facilities. Educationally-oriented institutions should limit their focus to the preventive educational services they are best equipped to offer.

WHAT ARE THE OBJECTIVES OF THE PROGRAM?

Drug education program objectives follow a continuum ranging from total abstinence to drug use advocacy or laissez-faire. These two extremes are not promising aims and frequently found. Midway between them, representing moderation. This position emphasizes facts (pro or con). It is impor neutrality is rare; values frequently imping attempts at remaining neutral. Further position assumes that the target student p the necessary decision-making skills to proc and 2) that such "unbiased" information w using caution on their part. Neither assump strated to be correct.

My position, as represented by the objec 1, is acceptance of drug experimentation as curiosity. This point of view represents a by my reliance on the student's internal r being independent from externals (drugs reasons. This value judgment, like those h planners, should be made explicit if inc education program. (Although this value ju my contributions to this book, it still rem ing.) Objectives should be specified and c along with a recognition of the values institutional) which can affect the program goals.

DOES THE PROGRAM EMPHASIZE ATTITUDES, BEHAVIOR O COMBINATION OF THESE EL

A drug education program can be design three different levels of human activity. 1) the program's format is factual in nature; it participant knowledge and understanding affective level the program attempts to emotions by considering participant attitud At the behavioral level the program's prim or strengthening alternatives as a means of participant drug use behavior.

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E OBJECTIVES OF THE PROGRAM?

gram objectives follow a continuum ranging
to drug use advocacy or laissez-faire. These two extremes are not promising aims and, fortunately, are not frequently found. Midway between them, however, is a position representing moderation. This position claims neutrality and emphasizes facts (pro or con). It is important to note that *true* neutrality is rare; values frequently impinge upon even the best attempts at remaining neutral. Furthermore, such a neutral position assumes that the target student population 1) possesses the necessary decision-making skills to process the objective facts and 2) that such "unbiased" information will, in fact, lead to drug using caution on their part. Neither assumption has been demonstrated to be correct.

My position, as represented by the objectives listed in Chapter 1, is acceptance of drug experimentation as a natural expression of curiosity. This point of view represents a value judgment guided by my reliance on the student's internal resources as well as his being independent from externals (drugs) except for medical reasons. This value judgment, like those held by other program planners, should be made explicit if incorporated in the drug education program. (Although this value judgment is reflected in my contributions to this book, it still remains open to questioning.) Objectives should be specified and defined by the planner along with a recognition of the values (both personal and institutional) which can affect the program's ability to achieve its goals.

DOES THE PROGRAM EMPHASIZE INFORMATION, ATTITUDES, BEHAVIOR OR SOME COMBINATION OF THESE ELEMENTS?

A drug education program can be designed to affect change at three different levels of human activity. 1) At the cognitive level the program's format is factual in nature; it is designed to increase participant knowledge and understanding of drugs. 2) At the affective level the program attempts to influence feelings and emotions by considering participant attitudes toward drugs; and 3) At the behavioral level the program's primary concern is altering or strengthening alternatives as a means of ultimately influencing participant drug use behavior.

Cognitive Focus

Most of the early drug educational packages were designed to evoke cognitive responses. It is now recognized, however, that solely cognitive approaches have often been ineffective (Smart, 1970; DeLone, 1972; Hoffman and Swisher, 1973).

One reason why cognitive approaches to drug education have been unsuccessful is that available information is scientifically incomplete. Furthermore, available scientific information about illegal drugs does not support prevailing societal attitudes about drug use. Definitive biochemical information can be found in the laboratory. When a chemical substance enters the human body, however, its psychological effects can only be conjectured. There seems to be more speculation than fact contained in much of the available drug information. Information alone seems to have little impact on a young person's drug decisions because much of the current information is biased or inaccurate. The target audiences of drug education programs are all too aware of these biases or inaccuracies.

In addition, cognitive approaches tend to focus on factual recognition and recall, the lowest level of cognitive functioning, however, if drug education programs focused on a higher level of cognitive functioning, these approaches might prove to be more effective.

The informational approach to drug education, however, should not be viewed as having only a negative impact. In some studies, the knowledge level of youngsters was significantly increased, without any subsequent impact on their drug attitudes or their levels of drug use. In summary, drug information by itself will probably not effect behavior change.

Affective Focus

The affective level concerns attitude formation and change. Scant drug education research has been conducted on this level. Most affective level programs state that they are concerned with attitudes, but the bridge from information to attitudes is rarely made. Some school drug education programs (Swisher, Warner and Herr, 1972) are attempting, through small group sessions led by counselors, to reinforce more conventional drug attitudes. Recent analyses of such efforts have sho shifts occurred among participants (W 1973; Wicker, 1969).

Behavioral Focus

The behavioral drug focus has recei cognitive level approach. A promising offer students desirable alternatives to lifestyles. These non-drug alternatives c as *experiential* and *meaningful*. The e temporary yet satisfying alternatives to sunset, a trust walk, sensory relaxatio kindness or the spirit of a holiday. A attempt is made to integrate an in interpersonal skills, and personality int will be meaningful and satisfying. A approach" seems promising, it has developed or adequately evaluated.

Planners of combined affective and b concentrate solely on the dissemination begin instead by examining the basic take drugs and then attempt to desig these reasons. An understanding of stu munication with them, is required for programs.

WHAT IS THE BASIC PHILOSOPHY

The two predominant theories of le education programs represent distinctive views. The first grew from Carl Rogers' the building of effective *interpersonal rela* these relationships is to communicat feelings and unconditional positive reg proach assumes that improved interpe preclude involvement with drugs. It is effective relationships between helper (t dent), or between the student and his p

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Recent analyses of such efforts have shown that positive attitudinal shifts occurred among participants (Warner, Swisher and Horan, 1973; Wicker, 1969).

Behavioral Focus

The behavioral drug focus has received less attention than the cognitive level approach. A promising behavioral approach is to offer students desirable alternatives to drug use and drug-related lifestyles. These non-drug alternatives can simplistically be defined as *experiential* and *meaningful*. The experiential level comprises temporary yet satisfying alternatives to drug experiences such as a sunset, a trust walk, sensory relaxation, an unrecognized act of kindness or the spirit of a holiday. At the meaningful level, an attempt is made to integrate an individual's values, talents, interpersonal skills, and personality into a pattern of living that will be meaningful and satisfying. Although the "behavioral approach" seems promising, it has not been systematically developed or adequately evaluated.

Planners of combined affective and behavioral programs do not concentrate solely on the dissemination of drug information. They begin instead by examining the basic reasons why some people take drugs and then attempt to design programs to counteract these reasons. An understanding of students, and ongoing communication with them, is required for effective planning of such programs.

WHAT IS THE BASIC PHILOSOPHY OF THE PROGRAM?

The two predominant theories of learning employed in drug education programs represent distinctively different philosophical views. The first grew from Carl Rogers' writings which focused on the building of effective *interpersonal relationships*. The essence of these relationships is to communicate an understanding of feelings and unconditional positive regard for others. This approach assumes that improved interpersonal relationships will preclude involvement with drugs. It is concerned with forming effective relationships between helper (teacher) and helpee (student), or between the student and his parents or peers. It is also

assumed that the student will move in the direction of greater self-development (self-actualization) and, as a consequence, will have fewer problems with drugs.

The second theory is based on ... notion of *reinforcement*. Unfortunately, negative reinforcements or scare tactics, which are often employed, have not been effective (Finlator, 1968). In addition, most drug media and audiovisuals rely on negative motivation as a means to prevention of drug use. "The most important disadvantage of the (drug education) film is the powerful counter-effect of peer group interaction, particularly when messages contain information that is erroneous or misleading. This can lead to a summary rejection of the total message as well as the formation of contrary attitudes and behavior patterns. The justification for use of the negative motivation message in . . . drug abuse (media) seems to rest on traditions that support its use and on processes that rarely question its validity or allow for analysis of effectiveness" (Capalaces and Starr, 1973).

Positive reinforcement programs,[30] encouraging involvement in alternatives to drug use, seem promising. The positive reinforcement approach recognizes that inherent in drug use are certain positive reinforcements for the individual. peer acceptance, escape from pressure, feelings of elation or relaxation, etc. (Cahoon and Crosby, 1972). A positive reinforcement approach would seek to foster healthy behavior prior to the time when drug decisions will be made.

The common ground between many program philosophies is that interactions with young people on the topic of drugs must begin with effective interpersonal relationships. Some recognize a wide range of possible response patterns, preferring to reinforce the patterns that are appropriate to the goals of the program. Others prefer to systematically accomplish a recognized goal.

WHO IS THE PROGRAM TO SERVE?

Many drug education efforts have made serious errors by not giving full consideration to the *developmental level* of the intended audience. Drug education programs tary school children, for instance, were di same information presented to junior or Programs serving younger populations fail into account. 1) many of the drug problen concern accidental use of household drug prescribed medication; 2) the activities a children are rarely included in school edu when included, decision-making skills are a when they may be lacking.

It is essential that the developmental audience be given extensive consideration. have been researched and described by schola literature will provide ideas as to the ac modify drug education programs for part levels.

It is further erroneous to expose young ienced youth unless they have common ch students to identify with their lifestyle an processes are most effective, with the ex figures, when the model is similar to the tar socio-economic class, and so on (Bandura, 19 of most ex-addicts, for example, are fa consequences of drug experimentation and most young people. Many young peopl involving reformed drug users to be a subtle (Smart, 1971).

Finally, school programs should not neces to student audiences. Parental and commun about drugs pose a challenge to educational p school programs with a community orientati groups recognize the existence of a problem solutions.

IS THE PROGRAM TO BE DIRECT O

Current drug education programs represen approaches. In the *direct approach* the focus

[30] Technically, a "positive reinforcement" program would reward the behavior one hopes to elicit and punish undesirable behaviors.

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HE PROGRAM TO SERVE?

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intended audience. Drug education programs designed for elementary school children, for instance, were diluted versions of the same information presented to junior or senior high students. Programs serving younger populations fail to take these factors into account. 1) many of the drug problems of young children concern accidental use of household drugs or refusal to take prescribed medication; 2) the activities appropriate to young children are rarely included in school educational efforts and, when included, decision-making skills are assumed to be present when they may be lacking.

It is essential that the developmental characteristics of the audience be given extensive consideration. These characteristics have been researched and described by scholars such as Piaget. The literature will provide ideas as to the adjustments needed to modify drug education programs for particular developmental levels.

It is further erroneous to expose young people to drug-experienced youth unless they have common characteristics enabling students to identify with their lifestyle and message. Modeling processes are most effective, with the exception of authority figures, when the model is similar to the target group in age, sex, socio-economic class, and so on (Bandura, 1969). The experiences of most ex-addicts, for example, are far removed from the consequences of drug experimentation and use anticipated by most young people. Many young people perceive programs involving reformed drug users to be a subtle form of scare tactics (Smart, 1971).

Finally, school programs should not necessarily limit themselves to student audiences. Parental and community misunderstanding about drugs pose a challenge to educational personnel. Frequently, school programs with a community orientation have helped parent groups recognize the existence of a problem and identify possible solutions.

IS THE PROGRAM TO BE DIRECT OR INDIRECT?

Current drug education programs represent two broad types of approaches. In the *direct approach* the focus is limited to drug use;

the *indirect approach* focuses on affective program elements such as an individual's values or decision-making skills.

Direct Approaches

A direct approach to the topic of drug abuse may take two forms. First, is the intensive short-term program such as a PTA meeting or school assembly where the entire audience is exposed to a multimedia presentation or a panel of speakers. A typical example of this approach is described by Halleck (1970) as follows:

> The American people have great faith in education. They have set out to educate our young people about drug abuse with a vengeance. Lectures on drugs have become almost a fixture of the high school and college curriculum. Even sparsely populated communities have appointed committees charged with promoting drug education. Such committees usually set up lectures or forums at which young people and their parents can hear experts discuss the effects and relative dangers of a wide variety of pharmaceutical agents . . . (p. 1).

In evaluating a short-term program of this type the author (1971) found that the "one shot" program had no impact on student drug attitudes or actual use of drugs. It appears that, although this type of program is common, it has limited value in preventing drug use. Ironically, it is reported that some youth began drug use after exposure to such a program.

Another direct approach is to delegate the responsibility for drug education to the health teacher. It has been assumed that health teachers have a basic understanding of drugs and alcohol and are able to transmit appropriate knowledge to the students. Another assumption is that the instructional unit can be added to the school curriculum with minimal disruption of the regular school program. Unfortunately, the belief that health teachers are equipped to deal with drug use, even from a strictly cognitive viewpoint, is not always valid. Only recently have the states which require certification for health teachers provided training in the drug area. Negative student attitudes toward health courses is another complicating factor. (Frequently, students view health courses as an unnecessary appendage of the physical education program.)

Indirect Approaches

The indirect approaches which appear those which emphasize factors which se student drug use and experimentati place less emphasis on factual in than do direct approaches. The individua with situations and experiences which fo personal and social problems along with substances.

Value-oriented and other affective Chapter 8 are examples of indirect ap subject areas and grade levels are encour drug materials and blend these with t (values, attitudes, and decision-making); cognition personalizes the student's le drugs.

A promising indirect approach describe suggests that, instead of attempting to should help students clarify the valuing p based on various "strategies" which ra student with inconsistencies, and allow values and relate them to his behavior. T new; it has not been adequately evaluate education. Preliminary research, howe approach may be beneficial to students.

Curricular integration is another indi attention from school personnel. The basic drug material into the entire curriculu curriculum (available from the National Abuse Information, 1970) provides mater variety of courses including history, Engli possible to include relevant drug concepts music (e.g., psychedelic rock) or home additives).

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Indirect Approaches

The indirect approaches which appear to be most promising are those which emphasize factors which seem to be associated with student drug use and experimentation. Indirect approaches place less emphasis on factual information about drugs than do direct approaches. The individual is, therefore, confronted with situations and experiences which foster an examination of his personal and social problems along with learning about chemical substances.

Value-oriented and other affective programs described in Chapter 8 are examples of indirect approaches. Teachers in all subject areas and grade levels are encouraged to develop cognitive drug materials and blend these with the affective components (values, attitudes, and decision-making); this blend of affect and cognition personalizes the student's learning experience about drugs.

A promising indirect approach described in *Values and Teaching* suggests that, instead of attempting to "teach values," teachers should help students clarify the valuing process. This approach is based on various "strategies" which raise issues, confront the student with inconsistencies, and allow him to examine his own values and relate them to his behavior. This approach is relatively new; it has not been adequately evaluated in the context of drug education. Preliminary research, however, suggests that this approach may be beneficial to students.

Curricular integration is another indirect approach receiving attention from school personnel. The basic theme here is to integrate drug material into the entire curriculum. The San Francisco curriculum (available from the National Clearinghouse for Drug Abuse Information, 1970) provides materials that can be used in a variety of courses including history, English and science. It is also possible to include relevant drug concepts in other courses such as music (e.g., psychedelic rock) or home economics (e.g., food additives).

WHO ARE THE APPROPRIATE RESOURCE PERSONNEL?

We are becoming increasingly more cognizant of the complexity of the drug and alcohol problem. Most of the early educational

programs relied on "experts," i.e., professionals who were knowledgeable about drugs (pharmacists, physicians, law enforcement agents, etc.). It soon became apparent that the failure to achieve objectives rested with people, not drugs themselves. If people are the problem, the most qualified drug "experts" should be "people experts." In other words, schools should first consider existing staff personnel who know, understand and communicate with the youth in their charge.

Furthermore, the involvement of youth in planning, implementing, and evaluating drug education programs offers promise. The U.S. Office of Education has consistently recommended that young people be involved in the development of drug education proposals. The Drug Abuse Council, Inc., has recently concluded an extensive project where young people were responsible for studying the drug problem in their communities and recommending solutions. The results of these and other student efforts are summarized in Chapter 10.

Some drug education programs use drug-experienced resource personnel. Research supports this strategy (Hafferty, 1970; Swisher and Horan, 1970), it indicates that some young people willingly seek the advice of drug-experienced resource persons. However, other preliminary research indicates that drug experienced youth have no particular impact in influencing drug behavior or attitudes in other youth.

Evidence from related educational research (Alberty, 1953) indicates that when young people are involved in planning their educational experiences that they profit more and are affected more by those experiences. It is suggested that existing staff and young people themselves can be appropriate resource persons. Programs should, therefore, involve a broad range of target youth and educational staff in planning and designing prevention efforts.

WHAT MEDIA SHOULD BE INCLUDED IN A DRUG EDUCATION EFFORT?

Many drug education planners have relied on films and other audio-visuals to convey anti drug messages to their students. Since the late 1960's private industry has capitalized on this trend by producing an incredible array of canned audiovisual programs. The National Coordinating Council on Drug
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SHOULD YOU EVALUATE Y
DRUG EDUCATION PROGR

All programs, regardless of their content o
include a systematic and controlled evaluat
following guidelines address minimum evaluat
Evaluations should:

- Stress the impact of the program on
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- Be objective, rather than subjective.
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SHOULD BE INCLUDED IN A EDUCATION EFFORT?

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anti-drug messages to their students. Since
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array of canned audiovisual programs.

The National Coordinating Council on Drug Education found that only 16% of the drug-related audiovisuals reviewed were scientifically and conceptually acceptable. Furthermore, there is a paucity of research regarding the impact of drug media on audience behavior and attitudes. It is time that films and other audiovisuals be considered only in the context of a broader, more carefully designed educational program. Any media, regardless of its accuracy, should comprise only a small part of the total drug education program.

If audiovisuals are included as part of a drug education program, their effectiveness, relevancy and accuracy need to be evaluated. The National Coordinating Council on Drug Education suggests that films be previewed by students and educators prior to classroom use. Ideally, "any community, school or organization which intends to use a reasonable quantity of audiovisuals (should) form a Prescreening Review Board." This review board should systematically view and evaluate drug-related audiovisuals and other resources. (Sample film evaluation questionnaires are included in the appendix of this chapter for use in reviewing the quality, accuracy and appropriateness of drug media.)

SHOULD YOU EVALUATE YOUR DRUG EDUCATION PROGRAM?

All programs, regardless of their content or procedures, should include a systematic and controlled evaluation component. The following guidelines address minimum evaluation standards.

Evaluations should:

- Stress the impact of the program on the recipients. Some evaluations have been conducted from the perspective of expert opinion. It is contended, however, that there is often a large gap between "expert" opinion and actual impact of the program on the target audience
- Be objective, rather than subjective. Simply asking participants how they felt about an educational experience is not sufficient as an evaluative technique. However, procedures which objectively measure attitudes and behavioral changes are required if results are to be considered reliable

- Utilize a legitimate experimental design with adequate controls
- Attempt to compare the relative effectiveness of more than one approach to drug abuse prevention
- Ascertain the relative effectiveness of various approaches with different populations
- When possible, coordinate instrumentation and program strategies with other drug education research projects in order to facilitate comparison of research data

In summary, only through the careful
objectives and means for evaluating w
those objectives, will there be any cond
constitutes effective drug education
conceived evaluation may require th
researchers, the cost of procuring such ex
by the staggering waste of resources assi
programs. Once evaluated, those approac
be effective by the criteria used, shou
planning activities based on their researc
evaluation cycle discussed throughout this
begins and *ends* and *begins* again with pl
drug education.

APPENDIX
NATIONAL COORDINATING COUNCIL ON DRUG EDUCATION
DRUG ABUSE FILM EVALUATION FORM

Reviewer's Name _____

Reviewer's Occupation _____

Title of Film _____

1. How would you rate this film? Excellent _____ Good _____ Fair _____ Poor _____ Very Poor_____

2. Write "yes" in the space indicated, for those audiences which might benefit from this film. Write "no" in the space indicated if it m
for any of the groups.

Socio-economic level: Low _____, Lower Middle _____, Middle _____, Upper Middle _____, Upper _____
Black _____, Indian _____, Caucasian _____, Asian _____, Spanish speaking _____

Children under 12 _____, Children 12-18 _____, Young Adults _____, Adults _____

Parents _____, Teachers _____, Specialized Drug Educators _____, Health Professionals _____, Law Enforcement Personn

Straight _____, Hip _____, Everyone _____, No One _____, Other (specify): _____

gitimate experimental design with adequate

compare the relative effectiveness of more roach to drug abuse prevention

e relative effectiveness of various approaches t populations

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In summary, only through the careful establishment of program objectives and means for evaluating whether programs achieve those objectives, will there be any concrete evidence as to what constitutes effective drug education programs. While well-conceived evaluation may require the assistance of outside researchers, the cost of procuring such expertise is far outweighed by the staggering waste of resources assigned to poorly evaluated programs. Once evaluated, those approaches which are proven to be effective by the criteria used, should provide a basis for planning activities based on their research findings. The ongoing evaluation cycle discussed throughout this handbook continuously *begins* and *ends* and *begins* again with planning for more effective drug education.

APPENDIX
NATIONAL COORDINATING COUNCIL ON DRUG EDUCATION
DRUG ABUSE FILM EVALUATION FORM

_____

_____

_____

this film? Excellent _____ Good _____ Fair _____ Poor _____ Very Poor_____

ace indicated, for those audiences which might benefit from this film. Write "no" in the space indicated if it might be counterproductive

Low _____, Lower Middle _____, Middle _____, Upper Middle _____, Upper _____

_____, Caucasian _____, Asian _____, Spanish speaking _____

__, Children 12-18 _____, Young Adults _____, Adults _____

ers _____, Specialized Drug Educators _____, Health Professionals _____, Law Enforcement Personnel _____

_____, Everyone _____, No One _____, Other (specify): _____

3. Should NCCDE recommend this work for the audiences you indicated?

Yes _____ No _____

4. Should NCCDE list this work as objectionable for the audiences you indicated?

Yes _____ No _____

Circle the number which corresponds with you opinion on the work in question.

5. Scientific accuracy (if relevant)	+3	+2	+1	−1	−2
6. Effectiveness of this work as a teaching aid	+3	+2	+1	−1	−2
7. Clarity of message	+3	+2	+1	−1	−2
8. Creativity of presentation	+3	+2	+1	−1	−2
9. Technical quality of production	+3	+2	+1	−1	−2
10. Degree to which this work holds the attention of the assumed audience	+3	+2	+1	−1	−2
11. Degree to which this work could produce more realistic attitudes toward drug use	+3	+2	+1	−1	−2

Please use this space for any additional remarks on questions 1-11.

Answer all the following questions or only those on which you feel particularly qualified. If you find this questionnaire too restrictive (
please use a separate sheet for your critical notes.

12. Using specific examples, comment on the scientific and/or conceptual accuracy of this work. Does the work overgeneralize, or pres

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nend this work for the audiences you indicated?

o _____

work as objectionable for the audiences you indicated?

o _____

orresponds with you opinion on the work in question.

elevant)	+3	+2	+1	−1	−2	−3
rk as a teaching aid	+3	+2	+1	−1	−2	−3
	+3	+2	+1	−1	−2	−3
on	+3	+2	+1	−1	−2	−3
oduction	+3	+2	+1	−1	−2	−3
work holds the attention of	+3	+2	+1	−1	−2	−3
work could produce more rd drug use	+3	+2	+1	−1	−2	−3

y additional remarks on questions 1-11.

uestions or only those on which you feel particularly qualified. If you find this questionnaire too restrictive (spatially or conceptually), for your critical notes.

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es, comment on the scientific and/or conceptual accuracy of this work. Does the work overgeneralize, or present opinion as fact?

13. What is the message of the work? By what means and how well is it conveyed?

14. In what ways and with what groups should this work be used? Why?

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Contributors

L. Annette Abrams is a graduate of Howard University and is currently a Senior Program Analyst for the Drug Abuse Council. Ms. Abrams has been a Staff Assistant to a Midwestern Senator and a member of the staff of the National Coordinating Council on Drug Education. She has considerable experience in drug-related training and education; she is also a co-author of the Drug Abuse Council publication, *Dealing with Drug Abuse: A Report to the Ford Foundation.*

Richard H. Blum, Ph.D., is director of the Joint Program in Drugs, Crime and Community Studies at the Center for Interdisciplinary Research, Stanford University as well as being a Consulting Professor, Department of Psychology at Stanford University. Dr. Blum has served as a Consultant to the President's Crime Commission, the National Violence Commission, the Food and Drug Administration, the National Institute of Mental Health, and the Bureau of Narcotics and Dangerous Drugs. He has published widely in the drug field as well as in the fields of mental and public health and criminology. Dr. Blum and his colleagues are currently engaged in a major program of drug education and evaluation in three California cities.

Emily F. Garfield is a graduate of Stanford University in biological sciences and has been associated with the Joint Program in Drugs, Crime and Community Studies since 1965. Her major efforts have been directed to those research projects specifically investigating the expanding non-medical use of drugs by young people. She has acted in the capacity of interviewer, field coordinator and, most recently, educator and Assistant Project Director.

Ross Goodell is a graduate of Pomona College, having studied mathematics and completed graduate work in statistics at the University of Wisconsin. He has had extensive experience as a Computer Programmer with IBM, having worked as an Actuarial Assistant, a Systems Engineer and a designer and programmer for a time-sharing program. Mr. Goodell has also served in the Peace Corps in Afghanistan as a consultant on computer installations.

Allen J. Gruman, Ph.D., has for the past ten years directed research and data processing activities for the Sequoia Union High School District in San Mateo County, California. He has also been an instructor of educational data processing techniques at several Bay Area Universities. He graduated from Carleton College, received his M.A. from UCLA and his Ed.D. from the University of Southern California. Dr. Gruman has also contributed numerous articles to educational data processing journals.

John J. Horan, Ph.D., is an assistant professor of education at Pennsylvania State University. His primary area of expertise focuses on another addiction in this society—that of obesity He has been successful in evaluating various approaches to changing eating habits. Dr. Horan has contributed to a series of drug education articles, most notable of which provides a behavioral explanation of drug use.

Donald Jones is a 1970 graduate of the University of Minnesota in psychology and sociology. He worked for a year in the Haight-Ashbury district of San Francisco providing young adult counseling, crisis intervention and drug education services. He has been a member of the Joint Program in Drugs, Crime and Community Studies since 1971. As a process educator and curriculum specialist, he is currently working in the Stanford Drug Project, *Children's Drug Use: Educational an*

John F. Strandmark is presently workin D.C.-based research firm directing an eva *Seminar,* a National Institute of Mental H education package. He has had considerab the implementation and evaluation programs as well as direct involvement efforts.

John D. Swisher, Ph.D., is an associate pr Pennsylvania State University and has recen text on approaches to drug education. providing drug education research; he researchers to question the role of inform drug education.

Richard W. Warner, Jr., Ed.D., is an education at Auburn University and is c counseling theories. Dr. Warner is also research studies which involved successful ated students. More recent research condu focused on behavioral alternatives to drugs.

.D., has for the past ten years directed cessing activities for the Sequoia Union High Mateo County, California. He has also been tional data processing techniques at several s. He graduated from Carleton College, m UCLA and his Ed.D. from the University a. Dr. Gruman has also contributed numtional data processing journals.

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John F. Strandmark is presently working with a Washington, D.C.-based research firm directing an evaluation of the *Social Seminar*, a National Institute of Mental Health multi-media drug education package. He has had considerable prior experience in the implementation and evaluation of drug education programs as well as direct involvement in student research efforts.

John D. Swisher, Ph.D., is an associate professor of education at Pennsylvania State University and has recently co-authored a basic text on approaches to drug education. He is best known for providing drug education research; he was one of the first researchers to question the role of information in the process of drug education.

Richard W. Warner, Jr., Ed.D., is an associate professor of education at Auburn University and is co-author of a book on counseling theories. Dr. Warner is also known for a series of research studies which involved successful counseling with alienated students. More recent research conducted by Dr. Warner has focused on behavioral alternatives to drugs.

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(7) Occasional Heroin Users: A Pilot Study

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